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ORIGINAL ARTICLES.

THE EXPECTANT TREATMENT OF APPENDICITIS. AN EXCURSION INTO THE FIELD BETWEEN SURGERY AND MEDICINE.

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I FEEL that I have a call to say a few words in order to give the results of a long experience and some reflections on this subject. My views are exactly contrary to some that have recently been very extensively circulated by papers read at medical societies, and by their publication and republication in many medical journals and also in lay journals. Most of these papers emanate from my friend, A. J. Ochsner, of Chicago, and are intended to influence the general practitioner in his method of treatment of appendicitis cases which are not deemed suitable for operation.

The operative treatment of appendicitis is regarded the world over as an American surgical achievement. On a recent trip to Europe and a more recent one to Japan I find that everywhere America is given much credit, or most of the credit, for having developed this department of surgery. But nowhere do they seem to know exactly who the men are that did the important work. And I must confess that I, who have followed American and foreign surgical literature very closely, would find it a difficult task to assign the credit to any one or to any ten or twenty men, among my coworkers in this country. A great many have contributed to the work of building up the almost complete structure as we have it now. The German, French, English, Swiss and Italian authors and contributors to surgical literature do not always give credit where it belongs. I for one feel that I am given too much credit by some European authors and not enough by others for the contributions I have made in this most important field of operative surgery. But in the last edition of Kocher's Text-book on Operative Surgery, published in Jena, in 1902, and now translated into English by Mr. Harold J. Stiles, F.R.C.S.Ed., of England, published by Adam and Charles Black, of London, in 1903, and in America by the Macmillan Co., we Americans are fairly treated. This volume is really not a text-book, but is a volume full of original suggestions and methods. Its author is the grand master of surgery, who, although a Swiss, was elected President of the German Society of Surgeons at Berlin, in 1902. This book is by far the most valuable memoir on surgery ever written by one man in the world's history. There is nothing so belittling as a priority dispute among scientific men, and men like the great foreign masters of surgery have no inclination to take from us Americans what we have fairly earned, on the contrary, I find them more than fair—they are generous.

The idea, that by the expectant treatment, cases of acute appendicitis may be tided over the febrile stage and the appendix removed later on during the afebrile stage, is gaining ground among general practitioners. Many physicians have been misled into trying expectant treatment as a regular routine measure. I do not think that Ochsner ever intended to advocate this method to the exclusion of the primary operation early in the attack, and I know of no surgeon of experience who does not always operate if called early enough. The expectant treatment is only to be thought of in cases that are seen after the best time for operation has been allowed to pass.

This secondary operation has been called the interval operation, because it is believed by some that if the appendix is not removed it may give rise to a second attack, hence the operation being performed between two attacks is called interval operation.

It is assumed that a first attack will be followed by a second one, a second by a third, and so on. How much truth there is in this assumption I do not know. I am conscious that I have done good in many of the hundreds of "interval" cases that I have done. I am sure that I have never seen a death follow an interval operation. I am also sure that some interval operations are not easy, providing that the object,—that is, the removal of the appendix and of adhesions and other lesions that may have been left behind by the attack,—is completely and thoroughly fulfilled. It is a fact that in many so-called interval operations the appendix is found "shamefully normal" or only slight, innocuous changes are found in or about the much-sought-for little rudimentary organ. I confess that in some of these cases the good to the patient was exclusively due to the psychical effect brought to bear. In some of the cases this psychical effect was such as to completely cure the patient of his *peri-typhlitophobia*. (God save the mark!) Could it be that some colleague, untainted by philology, would prefer appendo-phobia?

While I am making confessions, perhaps unwisely, but with a sort of satisfaction, I will add that I cannot throw off a feeling of embarrassment when I pull up a perfectly normal appendix before a corona of students or distinguished visitors. This embarrassment must be quite serious when a normal appendix is removed in six or eight cases in one day, as recently happened in a well-known hospital. Fortunately the histologist will always find infiltration of "small round cells" in the mucosa and submucosa. The

friendly pathologist does not mention that the mucosa of the appendix is always richly supplied with lymph-follicles, hence the copious infiltration of leucocytes will always be present, no matter how normal an appendix may be. After all is said, each case will still be left to the judgment of the physician and the surgeon. I would gently insinuate that the interval operation is not always necessary, and when it is remembered that a first attack is not always followed by a second attack, nor a second by a third, we will all agree that an interval operation may sometimes be unnecessary though it be harmless.[1]

About thirty years ago, at the time when I began the practice of medicine, after having finished a university course of five years, one of the important things I had learned was the treatment of peritonitis.[2] The method in vogue then at Heidelberg, Vienna, Paris, in fact at all the universities which I attended during the years 1872 to and including 1876, was as follows: Very scant, liquid diet, amounting to starvation in some clinics, frequent copious enemata, rectal feeding, opium, initial doses of calomel, castor oil, etc., the régime varying but little in different clinics. In England and in America the "opium splint" was thoroughly introduced. In the service of Spencer Wells, opium was given after all abdominal sections in order to prevent peritonitis. His lowest mortality in one hundred cases of ovariotomy was 13 per cent.; his average was 16 per cent. Then came Lawson Tait, who, even before Bouchard, arrived at a crude auto-intoxication theory and, acting upon it, changed the opium method, which he had tried for years, into the purgation and cathartic treatment.

At one stroke he reduced the mortality of abdominal section from 15 per cent. to less than five per cent. This feat of Lawson Tait's should be counted among the greatest therapeutic triumphs, coming before the auto-intoxication experiments of the French scientific experimenters, —as it did. Lawson Tait, in his empirical, unscientific way, said that purgation with salts etc., not only flushed and cleansed the sewers of the organism of their toxic contents, but he claimed that the lymphatics of the intestines and mesentery, being loaded with used-up toxic material, were drained by active catharsis. His empirical teachings have now been sustained by experiment, and the opium treatment relegated to the records, where many therapeutic mistakes are put away.

It is proper to mention here that Spencer Wells was more thorough in his antisepsis and cleanliness than was Lawson Tait. In my opinion the difference between their results is largely due to the abandonment of opium and the free use of purgation by Tait. In America fortunately the Tait system was rapidly introduced by the many pupils who followed his methods, and the opium treatment of peritonitis was crowded out after a severe struggle on the part of the conservative mossbacks, a rare specimen of which tribe I occasionally run across even at the present time.

In order to most drastically observe the difference between the effects of treatment by the "opium splint" method and the cathartic purgative method, it is sometimes possible to make a comparison in a large general hospital where cases of peritonitis are often admitted in late stages of the disease.

For instance: A physician of the old school has treated a case of peritonitis caused by appendicitis by the expectant method. We will say the opium splint has been well applied to the poor man's belly. He had also had lavage, gastric and colonic, he has a temperature of 103.5° F. at night, pulse is 118 to 120 per minute, abdomen tympanitic, no appetite, in short, he is "getting well" under the expectant method of treatment. He has been sick two weeks and it is believed he will get well, and probably he may, but he is a very sick man. He is very properly being treated by all the approved and most careful liquid nourishment per mouth and per rectum methods. His money gives out and he is taken to the City Hospital.

At the City Hospital there is a young man at the top, say a pupil of mine or a pupil of some other surgeon, who has done many abdominal sections, say, over one thousand. When the patient is seen by the Superintendent, or, if it were in my service at the Lutheran Hospital, my assistant or even the head nurse would have given an enema, a large enema with warm water and a roaring big dose of salts immediately on admission. I would have ordered this treatment continued after I had seen the case, most certainly if I saw a narrow pupil indicating that the patient had had opium or morphine. Need I say that in twelve hours there would be a different picture, the temperature will have fallen, the patient's abdomen will be flat, he will have an appetite, his pulse will be lower, he will fall into a healthy sleep and it will soon be plain to all concerned that a rapid recovery is to be expected. A case of peritonitis caused by appendicitis being treated just like the other, only substituting daily use of salts for the opium would probably never get into the miserable condition in which the above-quoted case was found on admission—simply because in the one case the used up and toxic matter, instead of being flushed out of the sewers, is confined in the intestinal tract and its lymphatics.

Now in order to clearly show what I am polemicizing, let me quote one of Ochsner's sentences which he offers with a view of reducing the mortality:

1 The harmlessness depends to a great extent upon the technic. The length or method of closing the incision being most important.

2 It will be admitted by all that nearly 95 per cent. of cases treated as peritonitis in those days were pure cases of appendicitis. These figures being nearly correct when speaking of male wards, in female wards the figures are slightly different, not referring to gall-bladder, stomach and other rarer conditions.

"Thesis 4.—In all cases of acute appendicitis, without regard to the treatment contemplated, the administration of food and cathartics by mouth should be absolutely prohibited and large enemata should never be given."

To this thesis or proposition I would offer the following amendment, or, rather, substitute:

In all cases of acute appendicitis the administration of food should be very scant, but cathartics and large enemata of warm water should be regularly given. In order to make a more perfect antithesis, I might add the phrase "without regard to the treatment contemplated," because even though an early operation be intended the purgation and the enema would greatly favor the patient, besides greatly facilitating the surgeon's work.

By contrasting the two sentences of advice the reader at once sees the difference and can decide which method he will follow in his practice. From the standpoint of a surgeon my experiences leave no room for doubt, the results will be vastly better when operating upon a case that has been regularly purged, than in those cases that have not been flushed out by cathartics and enemata. Acting upon this conviction I recommend my substitute to the general practitioner who may decide in favor of an expectant treatment of appendicitis.

For fear of being misunderstood, I will add that the ideal method of treament is the operative method, carried out in the beginning of the attack. If for some cause this time has been allowed to pass, then I also agree that the expectant treatment may come into consideration and will often give better results than the operation in late cases. The best time for operation having passed, the purgation treatment will give the best results and not the method which has by some been called the Ochsner method. This latter method looks like turning backward the hands of the clock in its progress, and ignoring the advances recently made in the art of medical practice, returning to a time now over twenty years past.

This is not the place to discuss the long-settled question of the possibility of purging a patient by means of cathartics into his own peritoneal cavity or cœloma. I rather think that the warning against cathartics and enemata is based upon a fear of rupturing an existing walled-off abscess into the cœloma or peritoneal cavity. But this danger seems to me quite as imaginary as the first mentioned and not really based upon well authenticated autopsies. But a discussion of these questions would lead us into experimental pathology and pathological anatomy.

I have seen many perforated appendices and the escaped fluid was always limited to the fluid contained in the appendix before the perforation. In 350 cases operated on during the last few years I have notes bearing on this question. In all of these cases cathartics had been given before the operation and if they had not been given, I ordered them to be given, as well as enemata before making the operation. In no case did I ever see escape of intestinal contents, caused by the cathartic, either into the abscess cavity or the peritoneal cavity. Of course, the fluid, pus or at least purulent material had a fecal odor, in fact fecal concretions, coproliths and similar substances having fecal odor were often found. Only rarely would manual pressure upon the exposed cecum press out fecal contents and I am sure that cathartics would never expel contents of the intestine through a perforation as long as the abdomen is closed. The contents will always follow along the line of least resistance, which nature has wisely placed along the lumen of the intestine. Were it not for this provision of nature our efforts in abdominal surgery would amount to but little, for no kind of suture, ligature or union would hold against internal intestinal pressure.

Several other theses besides No. 4 are erroneous, notably No. 9, which says: "All practitioners of medicine and surgery as well as the general public, should be impressed with the importance of prohibiting the use of cathartics and food by mouth as well as the use of large enemata in cases suffering from acute appendicitis." In the interest of reducing the mortality this thesis should read: *All practitioners of medicine, and the public, if you like, should know that the proper treatment of acute appendicitis is by the regular use of cathartics and copious warm enemata and the restriction of food by mouth, to a minimum of liquid nourishment, and rest in bed with large, moist, warm, antiseptic poultices over the belly.*

Ochsner's thesis No. 2 is also misleading. I will quote it *in toto:* "No. 2.—Patients suffering from acute appendicitis should be operated on as soon as the diagnosis is made provided they come under treatment while infectious material is still confined to the appendix if a competent surgeon is available."

According to my observation, on opening the abdomen the infection will be found to have spread beyond the outer coat of the appendix and to have involved the adjacent intestines and their peritoneum in at least nine hundred and ninety cases out of any thousand cases. It may be that in ten of the cases the disease will be limited to the inside of the appendix in acute cases, in which the diagnosis is made by a competent man. In cases in which the infectious material is confined to the appendix there should be no postoperative mortality. I have not been so lucky as to find ten cases confined to the appendix in my entire life and I have seen over 1,700 appendices through an abdominal section. I do not agree that the diagnosis can be made with regularity and certainty as long as the infection is confined to the mucous or inner coat of the appendix, where it nearly always—I may say, where it always—starts.

This thesis No. 2 must be dropped because it deals with a condition that is rarely diagnosed. The other theses may pass, they deal with subjects that are well understood and I may say that I only wish to do away with the theses that oppose the use of cathartics, because I believe their regular use will very materially decrease the mortality of acute appendicitis, no matter by what other methods they are treated. My strong views against the use of opium are sufficiently well known, having been published and read before important societies, for instance the Oregon State as well as the Iowa R. R. Surgeons' Society as long ago as 1896 or even earlier.

A few words about statistics. I believe Ochsner's to be more true than most others, but I am constrained to say that but very little can be proven by statistics, because different men mean different things although they be talking or writing about the same thing. Just compare what I have said about thesis No. 2. Ochsner evidently does not mean to limit the operation to cases in which the infection is confined to the appendix. He would not see five acute cases of that variety per year, even though he has a wonderfully large material to select from. I do not wish to disparage the publication of statistics, but I merely wish to say that they cannot be used without much danger of error, no matter how truthful and careful the compilers may be, for the reason above given. The old saying that anything can be proven by statistics is still true and always will be true, as long as men compile them with the object of proving theories or results. I will therefore leave the test of the two opposing methods to the army of hard-working physicians, who will have to choose the method that seems to them most plausible. That good results will follow both methods is probably correct, but the purgation method, in my judgment, is the most preferable and will get better results than the method which I have been combating. How many per cent. the purgation method will cure I cannot state, because I do not believe in statistics. I could easily produce perfectly truthful statistics of cases treated by the expectant purgative method showing a very low mortality, but they would justly be regarded by others as I regard theirs. Let us remember that statistics are, after all is said and done, only ex parte evidence, be they "as true as gospel or even truer than that," as the great Christian Fenger once said to me.

American Bacteriologists.—According to *Science*, at the meeting of the Society of American Bacteriologists, held in Philadelphia on December 28, 1904, the following officers were elected: President, Prof. E. O. Jordan; Vice-President, Prof. S. C. Prescott; Secretary and Treasurer, Prof. E. P. Gorham; Council, Prof. F. G. Novy, Dr. Erwin F. Smith, Prof. F. D. Chester, Dr. J. J. Kinyoun; delegate to the council of the American Association for the Advancement of Science, Prof W. H. Welch.

OBSERVATIONS UPON THE MORPHOLOGY AND CLASSIFICATION OF THE MYCOBACTERIUM (Bacillus) TUBERCULOSIS.[1]

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THE very radical changes which have occurred during recent years in our conception of the position of the organism causing tuberculosis makes it of importance to put upon record any observations which assist in placing the organism upon a definite basis as regards classification. Until within a very recent date the organism concerned in the etiology of tuberculous disease was considered a typical example of a bacillus, but the researches of many investigators has definitely proven that it can no longer be classed as belonging to the group of bacilli, but is in all probability an *Actinomyces*.

In 1898, I described in the *Journal of Experimental Medicine*[1] the occurrence of branching in the tubercle bacillus. Previous to this time, in 1897,[2] I had described certain other variations in in the morphology of this organism, and since that time have been especially interested during the routine examination of specimens of tuberculosis sputum, in observing the great number of departures from the classical description of this organism as given in text-books upon bacteriology. During my service in this laboratory I have preserved 509 specimens of sputum from as many cases of tuberculosis, with special reference to a careful study of the morphology of the organism. I have been very greatly impressed with the effect which a tropical climate seems to have upon the growth of this organism, as evidenced by its structure. Almost all the specimens which I have examined have been obtained from soldiers returning from the Philippine Islands, at least 480 of the specimens being from that number of cases of tuberculosis which have been invalided home from Manila. The study of this question is of importance both from a scientific and a practical standpoint. From a scientific standpoint, the great variations which occur in the morphology of the parasite would seem to indicate that it does not belong to the group of organisms known as bacilli, but rather to some higher group, and from a practical standpoint the study is valuable because a large number of the specimens showed organisms which depart so radically from the descriptions given that unless one is prepared to accept them, they would hardly be diagnosed as tubercle bacilli. The study of this question is also of importance because of the attention which is being given just at this time to the variations between the tuberculous organisms of man and animals, as the variations observed in the organism occurring in the human sputum, so far as the morphology is con-

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1 Published with permission of the Surgeon-General of the United States Army. From the Annual Report of the United States Army General Hospital Presidio, San Francisco, Cal., 1904.

cerned, are greater even than those observed in the mammalian and human organisms.

As generally described, the tubercle bacillus consists of a slender, straight or slightly curved rod, one-half to two-thirds as long as the diameter of the red blood corpuscle. As a rule, it stains readily with special stains used for this purpose, but here and there unstained areas are observed within it, which by some authorities have been regarded as spores, but that they are spores is not accepted by the best observers. This classical description of the organism certainly applies in a great majority of instances to those observed in sputum of patients contracting the disease in temperate regions, although even in these regions very great departures from the classical description are by no means rare. In my experience, however, with the organism as it occurs in the sputum of patients returning from the tropics, this description is very inadequate, as in almost all specimens organisms are seen which differ so radically from it that it has often seemed as though other organisms were being observed. It is this effect of the tropics upon the growth of the organism, as shown by its morphology, that I would especially call attention to. It would seem that the greater moisture and heat of such regions enables the organisms to grow very luxuriously, and in forms which are not usually met with in the sputum of patients in temperate climates. It is a well-known fact that cases of tuberculosis in the tropics run a rapidly fatal course. This must, of course, be due to the greater multiplication of the organisms, their greater virulence and size; and, if anything can be told from the morphological appearance of an organism as to its virulence, certainly the organisms seen in the sputum of these cases bear out the well-known clinical facts.

Variations in Length.—The greatest variations occur in the length of the organisms, some being so short as to be almost like cocci, but the majority much longer than those usually found. Long filamentous forms are very common, at least 75 per cent. of the sputums which have been examined showing them. This form is not uncommon in old cultures, but is rare in sputum in cases occurring in this country. These long filamentous forms stain well, but often present a beaded appearance due to unstained intervals within them. They are generally slightly curved and often are curved in opposite directions two or three times in their course. I have seen these organisms so long that if they had been observed alone, without others of more typical appearance surrounding them, a diagnosis of tubercle bacilli would not have been made. A very common appearance observed in the long form is a deeply staining dot at one end somewhat broader than the organism itself, thus giving it a slightly clubbed appearance.

Very short organisms are often present and these are generally much thicker than the long ones. This difference in thickness is very marked in some instances. It is not due to the opposition of one or two organisms, because the most careful focusing fails to reveal any distinction, the organism staining solidly throughout. Many organisms are seen of the typical length, and it should be understood that no one specimen presents organisms of one length, but in almost every specimen will be found long filamentous forms, the very short forms, and those of ordinary length.

Variations in Breadth.—One of the most notable variations occurring in tubercle bacilli in the sputum of patients from the tropics has been increase of breadth. As ordinarily seen the tubercle bacillus is remarkable for its delicacy, the breadth being in many cases very slight. In the majority of specimens, however, in patients from the tropics, the organism is quite thick, certainly three or four times as thick as those observed in the sputum of cases in this country. These thickened organisms stain very deeply and do not, as a rule, show the unstained areas which are so noticeable in many specimens.

Variations in Contour.—Beside the classical bacilli which answer to the description given in the text-books, specimens of sputum from these cases show very great variation in the contour of the organism. Very many specimens show organisms which present in some portion of their length a well-marked knob. Others are swollen at the end or toward the center, while many are completely bent, forming a letter U or S. Curved forms are very common, the curves generally being very well marked.

Variations in Staining Power.—Most of the organisms observed in these cases stain very intensely and retain the stain under the most severe acid treatment. There are numerous instances in which the stain is interupted, leaving unstained areas irregular in shape, and often distinct interruptions are observed extending entirely across the organism, thus giving it the appearance of a chain of cocci. Very deeply staining areas are often observed, especially at the ends of the long forms. These areas are generally greater in diameter than the rest of the organism.

A brief description will here be given of the most common departures from the classical type, as observed in the sputum from the class of cases mentioned:

1. *The Streptococcic Form.*—I have applied this name to this type of the organism because in the stained specimens it resembles a chain of streptococci. This appearance is due to an interruption of the stain, the result being a chain of deeply stained areas alternating with unstained intervals. If such forms occurred alone in the sputum and the decolorizing agent was not used to differentiate them, they would invariably be taken for streptococci, but as numerous other organisms are always present which are more typical in structure, this mistake will not readily be made. These unstained intervals in the para-

site have been regarded by some authorities as spores, but a careful examination will show that these intervals are not spore-shaped, and that no method used for the demonstration of spores will stain them. This form of the organism is much more difficult to differentiate than the form which shows slight unstained intervals, but with a narrow stained band connecting the stained portion. This band or enveloping material in such instances retains the stain, but in the streptococci form it does not. The length of this form of the organism varies considerably, sometimes being very short and sometimes almost filamentous. In the latter case the resemblance to a chain of streptococci is still more marked.

2. *The Clubbed Form.*—As I have already mentioned, numerous instances are seen in which the end of the bacillus is enlarged and takes the stain very deeply. Such organisms resemble very much the clubbed form of the diphtheria bacillus and also certain forms of actinomycetes. Very often these clubbed organisms will be seen collected in masses. Careful focusing will demonstrate that many of them are branched and interlaced. These organisms generally stain very well throughout their entire length, but there are unstained intervals, minute in size, scattered along them. The clubbed extremity always stains much more intensely than the remainder of the organism.

3. *Budding Forms.*—In at least two-thirds of the sputums examined, this form of the organism has been found if it was looked for long enough. It consists of a rather long rod at one or more portions of which there occurs a distinct enlargement or knob, projecting laterally. This enlargement stains deeply and is rounded in appearance. The enlargements occur most frequently in the filamentous forms, sometimes three or more being seen in one organism. This budding, as I have termed it, is undoubtedly the first stage of branching which has occurred so frequently in the organisms found in patients returning from the tropics, and which will now be described.

4. *Branching Forms.*—In 1898[3] I described true branching tubercle bacilli occurring in the sputum, which was the first description, I believe, of this form of the organism occurring in this country. Previous to my description a considerable amount of attention had been paid to this form of the parasite by Coppen Jones and Fischel. At that time I considered branching as an exceedingly rare occurrence, and that it was probably due to diminished virulence of the organisms, as such forms are not very uncommon in old cultures. Since then I have paid especial attention to this form of the organism and have been impressed with the great frequnecy with which it occurs in the sputum of tuberculous cases which have originated in the tropics. In over 80 per cent. of the cases which I have examined branching forms of the tubercle bacillus have been demonstrated in the sputum. They occur with such frequency that I believe them to be a normal development of the organism under certain conditions, being most often present in cases occurring in a tropical climate. I have been able to trace in very many specimens the entire stage of growth of the branching form from the budding forms to the fully developed filamentous branch. The first stage of the process is the budding form which has already been described. The next stage consists in an outgrowth of the bud into a short branch. The number of branches present vary, some organisms showing but one, others two or three, or even more, growing at an angle from the parent organism. In this early stage they are generally shorter than the parent body and stain uniformly throughout, although the parent organism may show unstained areas. The organisms showing branching are always longer than those surrounding them, and it may be said that branching only occurs in the long filamentous forms. They resist decolorizing solutions much more effectively than do the unbranching parasites.

From this young branching form to the fully developed branching organism is simply a question of growth, the branch extending in length until it finally, in many instances, becomes longer than the parent body, and itself sends off other branches, so that in many instances an interlacing network is formed, due to the luxuriant branching of the organism. Of these fully developed branch forms there are many variations. Sometimes only one long branch is given off, sometimes two or more. Very often one or more long branches will be seen accompanied by several bodies, indicating the commencement of other branches. The fully developed branches often show unstained intervals similar to those in the parent organism. Where this branching has occured in two or more organisms which lie near one another, a mass of organisms is formed in which the branches interlace and produce the appearance of an actinomycotic growth. Many specimens of sputum show these large masses of bacilli, and the appearance presented is so entirely diverse from what one would expect to see in tuberculous sputum that if other organisms were not present which were more typical in appearance, one would believe that the patient was affected with actinomycosis. In my observations, it has been possible to trace in the sputum the entire process of branching from the knobbed forms to the formation of mycelial groups. The organism which is destined to present this change becomes longer than usual and presents at some portion one or more knob-like outgrowths. These outgrowths gradually lengthen, and at last become true branches, and they in turn are capable of budding and giving off other branches.

This process should be carefully distinguished from the false branching which is often present, due to the apposition of the end of one bacillus to some portion of the length of another. This, at first sight, gives the appearance of true branch-

ing, but careful focusing will always demonstrate that there are two separate organisms concerned instead of one.

Significance of Variations in Morphology.—The question now arises, What do these peculiar forms of the organism of tuberculosis indicate? From this very short description of the variations in morphology of this parasite it will be seen that it is not a morphological unit, but that during its growth it is capable of assuming many forms, some of which are not those which are common to organisms classed as bacilli. In the first place, the occurrence in a class of cases where the conditions are most favorable as regards the growth of bacteria, would seem to indicate that these changes are not degenerative in character, but that instead they indicate a very free and luxuriant development. The view that they are degenerative in character is advocated by A. Fischer,[4] who believes that they are involution forms, but there are several objections to this view, the most important being that they are not limited to old cultures which have undergone loss of virulence, but are present in rapidly advancing cases of the disease in the sputum, and that in their staining reactions they do not differ from the typical appearing organisms. From my observations I am convinced that the occurrence of these forms necessitates some change in our views as to the classification of this parasite. Klein[5] believes that the branching is a reversion to an ancestral type which presented mycelial growth. Fischel[6] has pointed out the analogy between these forms and the actinomyces, and both he and Coppen Jones,[7] who have studied these forms very extensively, believe that they belong to the same group of organisms. Bruns[8] regards them as involution forms when observed under parasitic conditions. He says: "They pertain to the saprophytic growth form of a higher organism, which as a parasite in the animal body appears in the form of rods." The only objection to his theory is that these forms occur so frequently in the sputum of human beings, in my experience, that they can hardly be regarded as abnormal, and that they depend for their occurrence upon certain favorable circumstances which are not present as a rule in the human body. The description in recent years of certain lung infections due to the *Streptothricæ* has led several authors to express the opinion that the tubercle bacillus is very closely allied to this organism. Kruse[9] is inclined to believe that they should be placed under it, and Johan-Olsan[10] distinctly places the tubercle bacillus under the *Streptothricæ*. This group is especially characterized by branched filamentous forms or organisms, and is placed between the bacteria proper and hyphomycetes. Lehmann and Neumann[11] in their "Principles of Bacteriology," have classed the tubercle bacillus under the actinomyces and have given it the name *Mycobacterium tuberculosis*. From my observations, I am inclined to agree with this classification, as I do not believe, in the light of our present knowledge, that the organism can any longer be considered as a bacillus. It answers in every way to the description of the actinomyces, as it presents true branching, the club formation and mycelial formation. In sections of tissue Friedrich[12] found collections of this organism forming dense radiating groups, which answer in every way to those which I have observed in the sputum. In view of the fact that these forms occur so often and are so entirely different in their morphology from bacilli, it would seem that the retention of the name of bacillus for this organism, except because it is so well known and recognized, is not scientific, for the parasite undoubtedly belongs to the group of actinomyces, and the name given it by Lehmann and Neumann is much more correct from the botanical standpoint. The science of bacteriology is hampered by unscientific classifications, and any observations which will enable us to make these classifications more correct botanically are of the greatest service. It is of little practical importance whether the tubercle bacillus shall be known by that name or by some other, but it is of great importance from a scientific standpoint. An organism which presents such great variations in its morphology should no longer be classed among the simple bacilli, as such a classification gives an entirely erroneous idea of its appearance. The forms which I have described should be known, as their occurrence in small numbers and unaccompanied by the typical organism as described in the text-books would, without doubt, lead to an erroneous diagnosis and great injustice to the patient. For this reason I have called attention briefly to the variations which the organism presents, especially in the sputum of cases contracting the disease in the tropics, and I believe that futher observation will only prove that this organism is very pleomorphous and should no longer be classed as a bacillus. In a future report I shall describe more at length the various forms which I have mentioned, together with observations on the virulence of sputum containing such forms.

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Winnipeg General Hospital.—Dr. A. M. Campbell was appointed medical superintendent of the Winnipeg General Hospital at the last regular monthly meeting of the Board of Governors. The number of patients treated in January, 1905, was 593, as against 483 for the same month in 1904. The number of deaths amounted to 40, as against 19 for the same month in the previous year.

CLINICAL STUDIES IN URETERIC MEATOSCOPY.[1][2]

BY WALTER C. KLOTZ, M.D.,
OF NEW YORK.

THE importance of ureteral catheterization in determining the functional activity of the healthy kidney, and as an aid to diagnosis in renal disease has been generally recognized. At the same time this method possesses some disadvantages and certain limitations. While in most cases it can readily be carried out, it may be very difficult and tedious, and in some instances it is quite impossible. It has also been found that the information in regard to lesions of the kidney, obtained by means of the ureter catheter is occasionally disappointing. Thus a chemical and physical examination of the separated urines, offers a valuable means of determining the source of pus, blood or bacteria present in the urine,—but in some cases of renal disease, the urine is negative, and under such circumstances, a differentiation of the urine is obviously useless. Again, if the ureter is wholly or partially obstructed, the complete absence of or a marked relative diminution in the quantity of the urine from one side, may be a valuable sign, but care must be taken to ascertain that the catheter is not occluded with pus or mucus, and it must be borne in mind, that even in health both kidneys do not always secrete the same amount of urine in the same time. Used as a probe the catheter may detect an obstruction of the ureter, but it is not always possible to decide by this means whether such an obstruction is due to stricture, a calculus, or a kinking of the ureter. The ureteral catheter may pass a calculus in the ureter, without meeting with any obstruction, especially if the ureter is dilated or sacculated, while a calculus in the pelvis, of the kidney, can very rarely be detected by palpation with a ureter probe, particularly when a male cystoscope is employed.

On the other hand, valuable information can often be obtained, by the simple cystoscopic inspection of the ureteric orifices. It is possible in this way not only to note the escape of pus or blood from one or the other ureter and whether one or both kidneys are secreting urine, but it has also been observed, that in cases of renal disease, the ureteric orifice on the same side presents an appearance, differing distinctly from that of the normal. While these changes have been regarded as characteristic of certain conditions in the kidney, their exact clinical significance has remained undetermined. The subject seemed of sufficient surgical interest to demand further investigation, for if reliable data could be obtained without catheterizing the ureters, it would be a distinct advantage. With a view of determining how far these changes could be relied upon as a means of diagnosis in diseases of the kidney, and encouraged by Fenwicks' recent work along the same lines I have during the last year more carefully noted the cystoscopic findings in cases referred to me for ureteral catheterization, on account of suspected renal disease. At the same time I have endeavored to compare the value of both methods under similar conditions. At present only a small number of cases have been subjected to critical study, and in this preliminary report, no attempt will be made to draw any positive conclusions or to set up any fixed rules for the interpretation of the changes in the ureteric orifices, described more fully in connection with the clinical histories reported below.

In the following cases, most of which occurred in my service as cystoscopist to Roosevelt Hospital, I shall present only the bare facts, and in order to make these reports as brief as possible, I have included only such features as have a direct bearing on the cystoscopic examination. I am indebted to the gentleman referred to under each case for the use of clinical data and the reports of operations.

The first group comprises 12 cases of nephrolithiasis. This condition was the one most frequently encountered, and at the same time it is one in which the diagnosis is often most difficult.

Case I. M. W., female, aged thirty-five years; private patient of Dr. N. W. Green. History of partial suppression and pain in region of kidney on right side. Urine contains few red blood cells, but no pus, symptoms improved under general treatment. Cystoscopy, January 30, 1904, bladder normal, left ureteric orifice normal, secreting clear urine, right ureteric area occupied by a circumscribed swelling of reddened and edematous mucous membrane, almost obliterating the ureteric orifice situated at the summit of the tumor, no efflux or urine noted. Diagnosis: Renal calculus. Operation report: Small calculus in pelvis of right kidney.

Case II.—M. S., male, aged thirty years; patient on Dr. Brewer's service, Roosevelt Hospital. History of renal colic right side, X-ray shows shadow over lower third of right ureter. Cystoscopy, March 1, 1904, bladder normal, left ureteric orifice normal, secreting clear urine, right ureteric orifice shows redness and edema of surrounding mucous membrane, lips of orifice swollen, almost obliterating the actual orifice, efflux of urine cloudy, left ureter catheterized but catheter obstructed about 1 cm. from bladder, right ureter could not be entered by catheter. Diagnosis: Calculus in kidney or ureter. Operation report, large mulberry calculus in lower third of right ureter.

Case III.—M. R., male; aged fifty-six years; patient on Dr. Brewer's service, Roosevelt Hospital. History of renal colic left side, urine contains pus and granular sediment. Cystoscopy, August 11, 1904; bladder normal, few calculous fragments, right ureteric orifice normal, secreting clear urine, left ureteric orifice shows a distinct elevation of mucous membrane, the lips everted and edematous, and the surrounding surface of the interureteric fold red and congested;

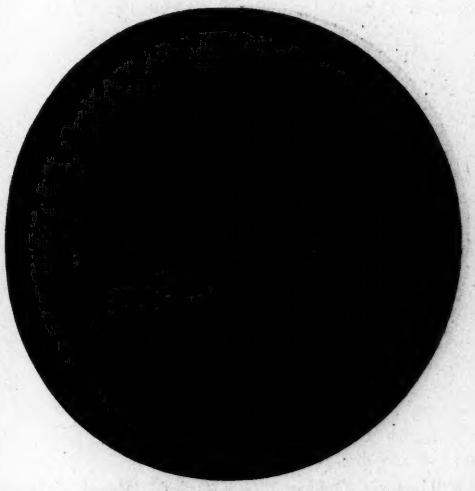
[1] From the Out-Patient Department, Roosevelt Hospital, New York.

[2] Read before the Surgical Section of the New York Academy of Medicine, January 6, 1905.

no efflux noted (Fig. 1). Left ureter catheterized, and catheter passed up 14 inches, no urine obtained after waiting one hour. Diagnosis: Calculus, impacted in pelvis or upper end of ureter. Operation report: Small kidney, calculus in pelvis of kidney, complete stricture of ureter about two inches below pelvis.

Case IV.—M. M., male; aged forty-six years; patient on Dr. Brewer's service, Roosevelt Hospital. History of renal colic on right side; X-ray shows shadow over right kidney, urine contains pus. Cystoscopy: August 12, 1904; trigone of bladder red and congested, right ureteric orifice lips elevated swollen and edematous, margins of orifice eroded, no efflux of urine noted, left ureteric orifice, also shows some eversion, edema and slight redness, but no erosion. Both ureters catheterized, on both sides the catheters could be passed to pelves of kidney. The urine from the left side was clear and of

Fig. 1.



Normal Right Ureteric Orifice (Case III).

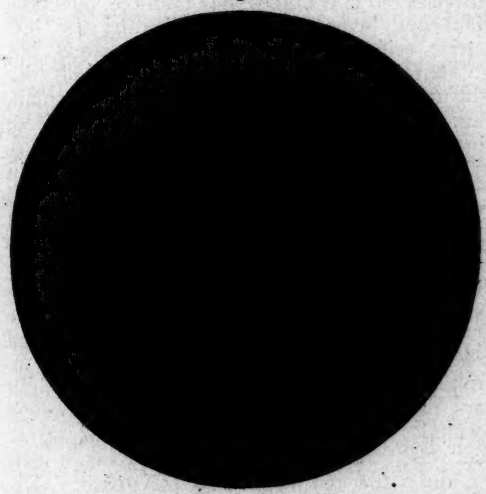
good quantity, the urine from the right side was scanty, and contained much pus. Diagnosis: Calculus of right kidney. Left kidney normal. Operation report: Large branching calculus in pelvis of right kidney. Further history and subsequent operation disclosed calculus imbedded in cortical abscess in left kidney.

Case V.—M. B., female; age thirty years; private patient of Dr. Brewer. History of repeated attacks of renal colic on the right side, X-ray shows constant shadow over right ureter, urine clear, no pus, no red blood cells. Cystoscopy, October 19, 1904: Bladder normal, both ureteric orifices normal, but somewhat large and open, both kidneys secreting clear urine, both ureters catheterized, urine from both sides clear, and of good quality. Diagnosis negative. No operation.

Case VI.—M. D., male; aged forty-three years; patient of Dr. Brewer's service, Roosevelt Hospital. History of attacks of pain over the course of the left ureter for several years. X-ray shows small shadow over lower third of left ureter, urine negative. Cystoscopy, December 16, 1904: Bladder shows trabeculation of posterior wall, both ureteric orifices normal, both ureters catheterized, on right side the catheter could be passed up the usual distance of 15 inches, on the left side the catheter was passed the full length or 20 inches without meeting with any resistance, the urine from the right side was clear and of good quantity, considerably less urine was secreted from the left side. Diagnosis: Dilatation of left ureter, no signs of calculus. Operation report: Small stone adjacent to, but outside the wall of the ureter in its lower third, stricture of ureter, chronic ureteritis.

It is probable, that in this case the ureter catheter on the side of the lesion was doubled up by the stricture of the ureter, and in this

Fig. 2.



Left Ureteric Orifice, Everted and Edematous, Renal Calculus (Case VII).

way the apparent great length of the ureter might be explained.

Case VII.—H. M., female; aged twenty-six years; patient on Dr. Blake's service, Roosevelt Hospital. History of renal colic on left side accompanied be dark color of urine, symptoms subsided under general treatment, at time of examination urine was clear and contained no pus and no red blood cells. Cystoscopy, October 27, 1904: Both ureteric orifices normal, typical in form (Fig. 2), both ureters catheterized, and catheters passed to pelvis of kidneys, urine from both sides clear and good quality, otherwise negative. No operation.

Case VIII.—M. T., male; age thirty-seven years; private patient of Dr. N. W. Green. History of renal calculus, perinephritic abscess and nephrotomy four years ago, since then has pyuria and occasional attacks of dull pain

in lumbar region. Cystoscopy, February 12, 1904: Mucous membrane of trigone and base of bladder red and congested, areas of congestion on posterior wall, no ulceration, no calculus, urine very cloudy, pus and bacteria, no casts. Right ureteric orifice normal but small, no efflux of urine noted, left ureteric orifice normal, secreting clear urine. Right ureter catheterized, catheter passed up 15 inches, no urine obtained after waiting one hour. Diagnosis: Chronic cystitis following old calculous pyelitis; right kidney not functionating. No operation, irrigations of bladder, urinary antiseptics, slow improvement.

Case IX.—V. S., female; aged twenty-eight years; patient on Dr. Blake's service, Roosevelt Hospital. History of pain over left kidney, X-ray shows doubtful shadow over left kidney, urine clear, no pus, no blood cells. Cystoscopy, November 13, 1904: Bladder normal except region of trigone on the left side which presents a stippled red appearance, like multiple, punctate, submucous hemorrhages, the lips of the left ureteric orifice were somewhat edematous, but not characteristically elevated or everted, the right ureteric orifice was normal, but very small, efflux of clear urine. Right ureter catheterized, urine clear and good quantity, attempts to catheterize left ureter abandoned on account of pain to patient. Diagnosis: Irritation of left renal pelvis, probably due to stone. Operation report negative; no calculus in pelvis or ureter, kidney healthy.

In this case as well as in the following, it is possible that a small calculus was passed before the operation, as in both cases there were typical clinical symptoms of renal calculus.

Case X.—M. B., male; aged twenty-eight years, patient on Dr. Brewer's service, Roosevelt Hospital. History of typical attacks of severe renal colic. X-ray negative. Urine clear, a little pus, and a few red blood cells. Cystoscopy, December 19, 1904; Right ureteric orifice normal, secreting clear urine, left ureteric orifice shows very marked circumscribed swelling of mucous membrane with intense edema, orifice almost completely obliterated, in attempting to catheterize the ureter, the catheter could be engaged in the orifice, but resisted all attempts to push it into the ureter. Right ureter readily catheterized, good quantity of urine collected. Diagnosis: Calculus in lower extremity of ureter. Operation report no stone found in kidney or ureter.

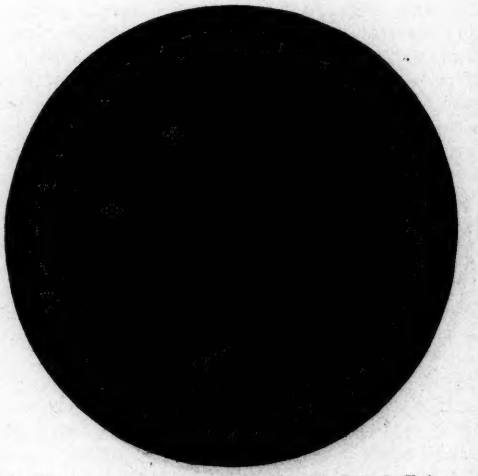
Case XI.—M. S., male; aged forty-four years; patient Dr. Brewer's service, Roosevelt Hospital. History of renal colic on left side, and of having passed stones, urine contains pus and red blood cells. Cystoscopy, January 2, 1905: Few calculous fragments in bladder, left ureteric orifice, large open, elliptical, lips everted and edematous, efflux purulent. Right ureteric orifice normal, secreting clear urine. Urethra too small to admit catheterizing instrument. Diagnosis: Renal calculus, and pyelitis left side. Operation deferred. (Operation, since reading of paper, showed extensive pyonephrosis.)

Case XII.—M. S., male; aged thirty-five years; patient on Dr. Brewer's service, Roosevelt Hospital. History of renal pain, and attacks of colic, has frequently passed stones, urine very purulent and contains granular sediment. Cystoscopy, January 2, 1905: Left ureteric orifice, normal but somewhat open and rounder than usual, right ureteric orifice normal, somewhat longer than left. Both ureters catheterized, Urine from right sde clear, urine from left side very turbid and cloudy, contains much pus. Diagnosis: Pyelitis left side. Operation deferred.

Similar changes were noted in the ureteric orifice in cases of renal tuberculosis and pyonephrosis as shown in the following histories.

Case XIII.—W. W., male; aged sixteen years; private patient of Dr. Brewer. History of frequency of micturition, tubercle bacilli found in the urine, pain on right side. Cystoscopy, August 1, 1904.: Mucous membrane of trigone red and congested, right ureteric orifice swollen and distinctly reddened, margins ulcerated. Left ureteric orifice normal, left ureter catheterized, urine clear, contains no tubercle bacilli. Diagnosis: Tuberculosis, right kidney. Operation report: Scattered tubercles in right kidney.

Fig. 3.



Left Ureteric Orifice, "Golf-Holed," Renal Tuberculosis (Case XIV).

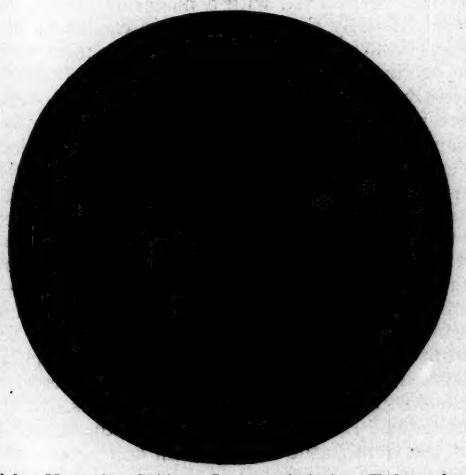
Case XIV.—M. O. B., male; aged twenty-eight years, patient on Dr. Brewer's service, Roosevelt Hospital. History: Frequency of micturition, pain on right side, urine contains pus and tubercle bacilli. Cystoscopy, October 28, 1904: Prostate swollen and congested, bladder normal, right ureteric orifice appears as a normal slit, the mucous membrane immediately external to it is deeply congested and thrown into market folds (Fig. 3), giving it a papillomatous appearance. The left ureteric orifice ap-

pears as an open round hole without any eversion or pouting of the lips (golf-hole type) the surrounding mucous membrane is normal (Fig. 4). Both ureters catheterized, the urine from the right side was negative the urine from the left side contained tubercle bacilli. Diagnosis: Tuberculosis of left kidney, possibly also of right. No operation.

In this case the appearance of the mucous membrane in the vicinity of the right ureteric orifice, while the orifice itself was normal and the urine from that side contained no tubercle bacilli, might be explained by the jets of tuberculous urine from the left kidney, being thrown against the mucous membrane of the opposite side and in thus producing an infection of this region of the bladder.

Case XV.—K. K., female; aged thirty-three years; patient on Dr. Blake's service, Roosevelt Hospital. History of renal pain on the right side, urine is cloudy and contains pus, no tubercle bacilli. X-ray negative. Cystoscopy, December 30, 1904: Bladder shows evidence of former cystitis, right ureter surrounded by a group of small, rounded, nodular tumors, a further group of similar tumors extends from the ureteric orifice toward the center of the trigone. The left ureteric orifice is normal. The whole trigone is markedly swollen and congested. Both ureters catheterized, no urine collected from right side, urine from left side clear and good quantity. Diagnosis: Pyelonephritis right side. Operation report: Pyonephrosis. (Probably tuberculosis.)

Fig. 4.



Right Ureteric Orifice Surrounded by Tuberculous Inflammation (Case XIV).

Case XVI.—M. D., female; aged about forty years; patient on Dr. Brewer's service, Roosevelt Hospital. History of a previous operation for abdominal and pelvic abscess, general sepsis, pyuria. Cystoscopy, September 1, 1904: Bladder normal, both ureteric orifices normal, both ureters catheterized, urine from left side clear and good quantity, urine from right side very scanty and purulent. Diagnosis: Pyelonephritis. Operation report: Pyonephritis, right kidney.

Case XVII.—M. G., male; aged thirty-five years; patient Dr. Brewer's service, Roosevelt Hospital. History of typical attacks of renal colic right side, congenital pinhole meatus of urethra. Urine contains some pus. Cystoscopy, October 13, 1904: Prostate enlarged and congested, bladder much dilated, posterior wall trabeculated. Right ureteric orifice appears as an elongated elliptical opening with rigid thickened edges, no efflux noted. Left ureteric orifice normal. Right ureter shows obstruction to further passage of catheter, about one centimeter from vesical end, no urine collected, left ureter catheterized, urine clear and good quantity. Diagnosis: dilatation of bladder, ureter and pelvis, stricture of ureter, near vesical end, right kidney probably diseased from back pressure. Operation report: Kidney normal, pelvis not dilated, complete stricture of ureter 14 inches below pelvis.

Case XVIII.—M. N., male; aged twenty-five years; personal, O. P. D. Roosevelt Hospital. History of frequent micturition, no urethritis, no cystitis, pain in right lumbar region, urine clear, no tubercle bacilli. Cystoscopy, November 12, 1904: Bladder normal, left ureteric orifice normal, right ureteric orifice large, open, oval in shape, lips thickened, both kidneys secreting clear urine. Diagnosis: Probable dilatation of pelvis, cause unknown. No operation—further observation.

Case XIX.—M. H., male; aged forty-one years; personal O. P. D. Roosevelt Hospital. Frequency of micturition, four times at night, some cough, has had urethritis, urine clear, no pus, no blood, no tubercle bacilli. Cystoscopy, December 3, 1904: Trigone and left interureteric fold red and congested, left ureteric orifice shows distinct, rounded, conical elevation, orifice itself small and round, secreting clear urine; right ureteric orifice normal, secreting clear urine. Diagnosis: No positive opinion; some affection of left kidney. No operation—further observation.

Case XX.—M. B., male; aged thirty-four years; personal O. P. D. Roosevelt Hospital. History: Pain in lumbar region, has had urethritis and stricture, urine contains some pus. Cystoscopy, December 15, 1904: Bladder normal except for some redness and congestion in region of trigone; prostate moderately enlarged and congested; both ureteric orifices normal; both ureters catheterized; urine from both sides abundant and clear. Diagnosis: Prostatitis. No operation; local treatment.

Taking up the results obtained in the above series of cases, and considering only the eleven cases in which lesions of the kidney were found at operation, it will be found that in four out of five cases of nephrolithiasis changes were noted in the ureteric orifice on the diseased side. In

the case in which no change was noted in the ureteric orifice, the calculus was found outside the wall of the ureter and had probably existed in this situation for some time. In the two cases of suspected nephrolithiasis (Cases IX and X) in which changes were noted in the ureteric orifices and in which no stone was found at operation, it is possible that a stone was passed either just before cystoscopy, or between the time of cystoscopy and operation. In the remaining six confirmed cases of renal disease, changes were found in the ureteric orifice in five. In the case in which ureteric meatoscopy was negative, ureteral catheterization was of distinct service.

While these figures cannot be accepted as a basis for any conclusions, the results so far would show that even if ureteric meatoscopy cannot replace ureteral catheterization in all cases, it may frequently furnish additional information and be of great service in those cases where ureteral catheterization cannot be carried out. It is to be expected also that with increased observation, it will be possible to make finer distinctions as to the appearance of the ureteric orifices and to more confidently draw inferences, as to their clinical significance. But before ureteric meatoscopy can be placed upon an absolutely safe clinical basis it will be necessary to definitely settle the following questions: What constitutes a normal and an abnormal ureteric orifice? What are the causes of any pathological changes, whether in a given case these causes exist in the kidney, the pelvis or the ureter? And, finally, whether the absence of change in the ureteric orifice is of any value in making a negative diagnosis? For the present these questions must remain unanswered.

SPRAINS OF THE KNEE AND ANKLE-JOINTS.[1]

BY J. T. WILSON, M.D.,
OF SHERMAN, TEXAS.

THE frequency of these injuries, the acute suffering produced and the occasional bad results following, suggested the subject of this paper and serve as an apology for it.

In the treatment nothing original or new is presented, but the management which has seemed productive of the greatest relief, which has given most satisfaction and been generally adopted is emphasized. These sprains are produced in a variety of ways and of every degree, the lesions involving for the most part the ligaments by which the joints are held together. In treating sprains of the knee and ankle-joints it is necessary to have in view at least the general outlines of the anatomy of these joints for their more comprehensive and intelligent management. Both are complex joints of the ginglymoid variety. The knee is composed of the condyles of the femur, head of the tibia and patella whose articular surfaces are covered with cartilage, and it will be remembered that these are held together by fourteen ligaments all firmly attached, which make it one of the strongest joints. The synovial membrane is the largest and most extensive of any joint in the body, is a serous membrane and when injured liable to serious pathological changes. The joint is well supplied with blood vessels and nerves; tendons of the muscles of the thigh are distributed about the articulation and four of them inserted into the patella. Its chief movements are flexion and extension with slight rotary. The ligamentum patella is the only ligament put upon the stretch during flexion, all the others are relaxed. Owing to the great amount of flexion of the leg upon the thigh, the two being brought in actual contact with ease, it is much more difficult to injure this ligament; on the other hand since in extension the ligamentum patella is relaxed and all the others are stretched, extension being limited to a certain extent, it will be readily seen that in this position serious injury can be inflicted with a moderate amount of force. Usually these injuries are caused by extensive violence, but occasionally we meet with one of considerable severity the result of an apparently insignificant twist. In slight sprains there may be only stretching of one or more ligaments, in severe sprains there is more or less laceration of the ligaments and bruising of the parts, rupture of some of the small arterial branches and nerves or nerve filaments, followed by more or less effusion, occasionally there is displacement of a ligament, or a scale of bone may be torn off; some of the cases may be complicated with dislocation or fracture and it is always important when there is much swelling and deformity to examine carefully for these complications. It may be necessary to use an anesthetic to make the diagnosis certain, but it is entirely justifiable. A correct knowledge of the condition will guide us in the management and upon it also may depend the results. A failure to arrive at a correct diagnosis has been the cause of improper treatment, leaving permanent injury and deformity. When the swelling and tenderness is extensive a correct diagnosis is often difficult, but these should be reduced and the diagnosis made as soon as practicable. A bad sprain is more difficult to recover from and takes a longer time, frequently, than a simple fracture.

Any serious trouble with a joint is liable to involve the bone and its periosteal covering. There is also the possibility of infection which would render the complication a grave one.

The immediate effect of a sprain of the knee is considerable pain, sometimes of a sickening character, an effusion, possibly part hemorrhage, and swelling progressing rapidly, rupture of one or more ligaments possibly including the capsular ligament. If the synovial membrane is involved to a considerable extent it renders recovery more tedious. "If a joint unsupported is painful when used, but painless when properly supported it is an indication of laceration or severe stretching of

[1] Read before the North Texas Medical Association, December 13, 1904.

supporting ligaments."[1] It is difficult to estimate how much damage is done to a joint in severe sprains, but it varies and depends largely upon the direction of the force, if it is applied to the knee in a state of extension, the damage will be greater in proportion to the degree of violence, and here in addition to stretching and laceration there may be displacement or a detachment of an articular cartilage. It is of great importance to know if there is a bone lesion to complicate the case.

The more promptly treatment is commenced after the accident the better the results obtained. I have found that if the patient is seen early, immersion of the part in very hot water will bring speedy relief from the pain. As it is very inconvenient to immerse the knee, flannel cloths saturated with water as hot as can be borne with which the knee is envoloped and covered with a dry cloth, oil cloth or rubber tissue, form an excellent substitute. This can be kept up by having two cloths; as fast as one begins to get a little cool it is replaced by the other, the water in which they are dipped being kept almost at the boiling point, and the application continued for from forty minutes to an hour. It not only relieves pain but retards swelling. If there is a simple contusion, a stretching of the tissues without laceration, a gentle massage for ten or fifteen minutes, followed by the Cotterell dressing, *e.g.*, strapping the joints with strips of adhesive plaster firmly applied longitudinally, beginning six or eight inches above and extending as far below the knee, overlapping each other and surrounded by a well-fitting roller bandage, is the most effective and satisfactory treatment. The patient can with the aid of a crutch or cane walk around to a limited degree with but little discomfort. With a more extensive injury the rubber plaster can be applied both in a circular and longitudinal direction, the popliteal space being properly protected. This is not an immovable dressing, and while it supports the parts very nicely it admits of a limited amount of motion which is desirable in this character of sprain. The patient is advised not to bear too much weight upon the limb and is restricted in the amount of walking. This dressing can be removed in five or six days in order that the parts may be bathed, massaged and passive motion instituted, when it can be reapplied; after this time the joint should receive a daily treatment of massage and movements, which can be done, though very imperfectly, over the rubber strips, yet sufficiently to be of considerable benefit. The dressings, however, can be removed every second or third day for this treatment and reapplied. If the skin should become irritated as it sometimes does, a tight stocking leg, as advocated by Hoffman, can be drawn over the knee and the strips applied over this.

When the sprain is more severe, the ligaments and tissues lacerated, the swelling, heat and effusion considerable, a different procedure is required. The hot water is applied as before, the effusion aspirated under strictly aseptic precautions and the joint put at absolute rest by a fixed dressing. I have had the best results follow the application of a firm roller enveloping the entire leg, beginning at and including the foot over which is applied a well-fitting plaster-of-Paris dressing, the popliteal space being properly protected, this plaster dressing extending from the ankle to the upper third of the thigh, the patient put to bed, limb elevated and placed in as comfortable position as possible. It is very important that this fixed dressing should not remain undisturbed long, as changes are liable to take place leaving a permanent injury. As the swelling recedes the bandages are liable to become loosened and the parts deprived of the proper support, a condition which will probably occur within three or four days. The dressing should then be removed, the plaster cut from top to bottom, preferably on one side, with a slice cut out so that the shape will not be affected, the joint massaged and gentle passive motion very cautiously instituted. The amount of massage and movement will depend upon the condition. If there is much heat, swelling and tenderness this procedure is omitted or practised very gently and to a limited degree. A second aspiration is justifiable if effusion has reaccumulated. If not removed it will cause much distention, retard healing and may cause permanent injury. The effusion in a joint is absorbed, as a rule, rather slowly. The dressing is now reapplied, the plaster tightened and held in place by an outside roller. These dressings should be applied in such a manner that the pressure may be equable, and should now be removed every day to admit of massage and passive motion, both of which must be performed with care and judgment and increased in degree as the tenderness gives way and the joint grows stronger. After a rest of about ten days or two weeks, if there is no pain of moment, the patient will be required to walk some each day. As soon as this fixation dressing can be dispensed with a nicely molded leather case may be applied, firmly laced, with advantage, or a steel bar apparatus which admits of slight motion of the joint and gives good support, and should be worn as long as there is any pain or much weakness. Some pain should not be a bar to the institution of motion. If this should be neglected and there should unfortunately follow ankylosis in any degree, if there is no heat or swelling the adhesions should be forcibly broken up under an anesthetic.

The ankle-joint is also classed as a hinge joint, yet has some lateral motion, the bones of which it is composed are the tibia, fibula and the upper convex surface of the astragalus. It is invested with stout ligaments, blood-vessels and nerves, is a very strong joint and connected by important structures. A severe sprain will sometimes involve not only one or more of the ligaments which immediately connect it, but the tendons of

[1] J. C. Bloodgood in Progressive Medicine.

the muscles which pass through them, the synovial membrane, and may tear the annular ligament, or displace some of the tendons. Of all joints it is the one that is probably most frequently sprained. In severe sprain with considerable swelling it is often difficult to decide if it is complicated by fracture or dislocation. It is not an easy matter sometimes to make a satisfactory examination because of the intense pain and swelling; to accomplish this it may be necessary to use an anesthetic. It is important to know the extent of the damage and what structures are involved. In some obscure cases an X-ray examination might reveal the lesions.

In most cases the lateral ligaments are involved and as in the knee when the injury is extensive, it may implicate the synovial membrane, rupture some of the vessels and nerves. The pain is often severe and the slightest movement increases it, motion is suspended, if lifted up the foot drops, in such cases it is probable that there is extensive laceration of the structures involved and there is generally a good deal of effusion quickly following the swelling which may be slow to disappear. Manipulation of the foot and putting the ligaments on the stretch will often indicate what structures are torn. It is important in the treatment of sprains of the ankle joint to know if possible what tissues are implicated. If the injury is slight or only moderately severe the foot and ankle is immersed in water as hot as can be borne and the temperature kept up to the point of toleration for thirty-five to fifty minutes when the pain will be greatly mitigated and the swelling in a measure retarded; then the treatment advocated by Gibney will give the best results of any that I have used.

He employs the Cotterell dressing as follows: "Employ massage for five or ten minutes with the foot well elevated. Next apply strips of rubber plaster about an inch in width and from twelve to eighteen inches in length over the part sprained beginning back of the injury. Aim to leave the part of the foot not affected as well uncovered as possible, but reinforce well as the strips are applied under the malleolus or malleoli. The first strip for a sprain of the external malleolus is applied beginning just above the ankle on the unaffected side of the foot, and ending on the affected side, about half way up the calf. This strip is usually along side the tendo achilles and makes firm support under the heel. The second strip starts on the inner side of the unaffected part of the foot, near the ball of the toe, comes round over the back of the heel, and ends about the base of the little toe. It crosses the first one just above the border of the heel. The third strip overlaps the first half way, the fourth the second, and so on until the part sprained is fully covered by this crisscross strapping. A cheesecloth bandage is applied, more with the idea of securing close adhesion of the plaster, and is removed within twenty-four hours. As soon as the dressing is completed the stocking and boot should be applied. The patient is now ready to begin walking, and this should be insisted upon in the presence of the surgeon. Direct him to walk about the room for eight or ten times, by the time this task is completed there will be very little lameness or disability. While it is undesirable to insist on too much walking for the next few days it is essential that the patient should walk as much as it is necessary for him to walk and attend to any duties that require a moderate amount of walking. At the end of the week it is well to remove the strips and reapply in the same manner as above. Two or three such dressings will complete the cure.[1]

For such cases as these, if treatment is well carried out, I doubt if any other plan can be devised that will give better results. The patient should be cautioned against another accident which might again twist the joint, while it is weak, and put the ligaments on the stretch. The amount of walking should be prescribed by the surgeon and the patient kept under his control. If the sprain is severe with extensive laceration of the tissues, the pain, swelling and effusion will be greater and a different method of treatment is required. The best results in these injuries are obtained by differentiating the various degrees and applying appropriate treatment for each. Beginning by the application of hot water in these cases is also of great benefit, then the patient should be put to bed, the foot elevated and put in the most comfortable position, so that it will be properly supported and at rest, with the application of soothing or hot evaporating lotions. In twenty-four or at most thirty-six hours if the effusion is found to be excessive it is aspirated with a small, clean needle, gentle massage, the application of a smooth, firm roller over which is applied a fixed dressing that will control motion and give proper support. Usually plaster of Paris answers well, which, except the heel and toes, should cover the foot and ankle extending half way to the knee. The foot is now placed in an elevated comfortable position. If there is not pain enough to annoy the patient this dressing can remain undisturbed for five or six days, when it is removed and a treatment of gentle massage is given. It is rather too early to begin passive motion of the joint, but the massage should be now practised every day and in three or four days if the swelling, heat and tenderness has diminished, the foot is moved cautiously by flexion and extension only, and is continued every day. If, however, the joint resents this interference by a relighting of inflammatory symptoms, it must be put at rest again undisturbed for a short period, and another attempt made with the same treatment and the effects watched. The amount of heat, swelling and pain should guide us in these manipulations. In the intervals the joint should be kept in the fixed dressing. Probably in two weeks a lighter plaster dressing can be applied but of sufficient firm-

[1] Dennis' Surgery.

ness to give support and as soon as dry the patient required to walk with a crutch and cane, bearing some weight on the affected foot, but it must be removed daily for massage and passive motion. The temperature, swelling and sensibility of the joint are important guides to active measures. As soon as the patient can walk with but little discomfort the plaster dressing is discontinued and a suitable, well-fitting leather case ordered, or a steel-barred apparatus with hinge joint. The wounded joint may be tender and weak for several months during which time the supporting apparatus is to be worn. While it is all important in these bad cases that in the beginning the injured member should be at absolute rest and all motion prohibited, this mode of dressing has its limits and if left too long is liable to cause damage that might be permanent. It is important during the entire treatment of a sprain to watch the general health. A suitable diet is prescribed, the bowels and kidneys kept acting and rest at night secured. Attention to these details will hasten the cure.

It requires great vigilance on the part of the surgeon to prevent the too free use of opiates, both for the present and future welfare of the patient who should be kept under observation until all pathological lesions have disappeared and the joint has resumed its normal function.

SYPHILIS OF THE LUNG SIMULATING PHTHISIS.[1]

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AND
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AS EARLY as 1858, Virchow described a pulmonary condition which he called "white hepatization" and which he noted especially in the lungs of syphilitic newly born infants. He also noted a brown induration and a collection of brown pigment in the lungs of a number of adults accompanying a similar congenital "white hepatization." This pigmentation he considered due to an impediment to the blood stream in its passage through the pulmonary tissue, consequent upon the filling of the alveoli by round cells. Virchow apparently did not feel, however, like committing himself to the statement that these hepatized areas were undoubtedly syphilitic processes. Wagner in 1863, Pavlinoff in 1879, Schnitzler in 1879, Hiller in 1884, Heller in 1888, and more recently many others including Councilman, Greenfield, Kidd, Perry, Rolleston, Weber, Wilks, Aufrecht, and Stengel, have also reported cases of apparent syphilitic pulmonary involvement. The question is often asked: "In cases that do not come to autopsy can we be sure that the process has not yet been of a simple bronchopneumonic character, or even of a tubercular nature; especially since tuberculosis is a frequent accompaniment of syphilis?"

When such pathologists as Virchow fail positively to diagnose the condition under the microscope, how indeed are we to assure ourselves of the clinical condition in a doubtful case of pulmonary involvement in a syphilitic patient? And still more difficult, how shall we make the diagnosis in the presence of a doubtful pulmonary lesion in a case supposedly not, but actually, syphilitic? These are not only interesting queries, but practical issues as the instance reported in this paper will demonstrate.

Case.—H. H., white, aged thirty-two years, born in Russia; an ironworker. His father, mother, two brothers and two sisters living and well. Patient has had measles and smallpox. Has been repeatedly exposed to venereal infection, but denies having suffered from venereal disease of any description. Claims never to have had a chancre or other sore upon his penis, or elsewhere on his body. Has experienced no sore throat, no alopecia and no eruption. Has always been engaged in hard labor, for years as a sailor and recently as an ironworker. Six weeks prior to admission to the Philadelphia General Hospital, on December 31, 1903, he contracted a "a severe cold" which persisted about a month. He then became stronger and better physically, but the cough continued, as did also the expectoration which had been profuse from the outset. About December 15, 1903, he began to expectorate blood. At first this appeared in occasional small streaks in the sputum, but has gradually increased in quantity, until at the time of admission it appeared in quantity with every coughing attack. The patient then appeared well nourished, of large muscular frame, his skin of good color and, except for his cough, he said he felt perfectly well. He was also frightened at the continual loss of blood. The physical examination found his mouth and throat normal in appearance, the glands of the postcervical and sternomastoid regions not palpable, the pulse rapid and small and not easily compressible. The pupils were equal and reacted promptly to light and distance. The patient was right-handed, but on inspection the right chest seemed more prominent than normal, especially over the lower portion. The expansion was relatively impaired over this area, though still remarkably free. The circumference of the right chest from midsternum to the spine at the level of the eleventh spinous process was 20 inches (50 cm.); that of the left side at a corresponding level was 18 inches (45 cm.); at the height of the scapular spine the right chest measured 20⅜ inches (50.9 cm.) and the left side 19⅝ inches (49 cm.). The expansion over the pulmonary bases was, on the right side three-quarters of an inch, and one-half inch on the left. Percussion resonance was also impaired over the entire right lower lobe, especially posteriorly. Tactile fremitis was slightly increased. On deep inspiration, over a space as large as the palm of the hand, just below the upper border of the right lower lobe, fine crackling râles and a scrap-

[1] Read before the Philadelphia County Medical Society, November 23, 1904.

ing friction sound were heard. Percussion over this area also gave distinct dulness, not amounting to flatness. Above and to the outside of of this area Skodaic tympany was easily obtained.

The middle and upper lobes on the right side showed prolonged inspiratory and expiratory sounds, also rather harsh, but no other abnormality. The apex was negative anteriorly and posteriorly. The left lung appeared to be altogether normal, except for a rather poor expansion. The abdominal examination was negative. There was no eruption on any portion of the body, and no scar nor induration was discoverable on the penis. The glands were enlarged only in the inguinal region, where both the deep and superficial chains were palpable on both sides. From December 31, 1903, to the date of his discharge, January 14, 1904, temperature which was 100° F. on admission, varied between this point and 97° F., where it was disposed to remain during the last days of his stay in the hospital. The pulse was 110 on admission, and averaged 90 during the subsequent period. The respirations gradually fell from 30 to normal. The blood showed a slight reduction of hemoglobin; the urine was normal.

The patient experienced little or no discomfort on the right side, but had a constant hacking cough, and brought up enormous quantities (two or more sputum-cupsful) of sanguinopurulent matter daily. The expectoration was very profuse in the morning, shortly after rising. There were no nightsweats, there was little or no loss of weight, the appetite was good, and the genreal impression given was that of a man with a strictly localized pulmonary lesion, and a general economy that was still amply competent to combat the advance.

On the presumption that the latter was tuberculous, the sputum was examined repeatedly, but on no occasion could tubercle bacilli be detected. Pneumococci were present in numbers. January 6, 1904, there was no cessation on the part of the pulmonary bleeding, which had now become so free that there was no more blood than mucopus in the sputum. The latter invariably showed, however, a thorough admixture with the blood, assuming rather a prune-juice than a bright red color. The patient was demonstrated on this day in Hughes' clinic, and an exploratory puncture made in the eighth interspace in the midscapular line. The first puncture yielded no fluid, probably owing to a faulty mechanism of the apparatus. The second insertion of the needle, however, to our surprise gave a syringeful of dark red blood, floating in which were large flakes of lymph, evidently from the surface of the pleura. The wound was sealed, and the patient returned to the ward in good condition, but still expectorating blood and mucopus as before.

In the doubt as to the diagnosis three conditions seemed possible, with the probability in the following order of mention; incipient pulmonary malignant disease, tubercular phthisis, and syphilis. It seemed to be very improbable that the lesion was parasitic (actinomyces, hydatid, etc.), since no evidence pointing to such an origin could be discovered in the sputum. Calcium chloride and gelatin were employed, together with prolonged, absolute rest in bed, but without effect upon the pulmonary bleeding, which appeared to be on the incresae. This fact, together with the absence of constitutional involvement, and the circumstance that the patient appeared to be otherwise in excellent physical condition, seemed to render tuberculosis unlikely, though still of course possible. Syphilis was also considered, though deemed unlikely in the light of the entire absence of a history of primary, secondary or tertiary lesions. Moreover pulmonary syphilis is by no means a frequent occurrence in medical literature.

The most probable condition, therefore, appeared to be an early malignant, in all likelihood sarcomatous, involvement of the lung and pleura and the tentative diagnosis of sarcoma was accordingly made. Microscopical examination of the flakes of lymph, obtained in the fluid drawn by puncture, it should be stated, gave no clue as to the nature of the pathologic process.

More as a matter of interest and empiricism than with the expectation of alleviating the symptoms, the patient was placed on January 7, 1904, upon large doses of potassium iodide (one dram three times a day), with the idea that harm could be done only in the unlikely event that the condition was tuberculous. To our astonishment and satisfaction within twenty-four hours the expectoration diminished in quantity and the patient stated that he was bringing up less blood. The treatment was persisted in, and after three days the sputum, while still free in quantity, contained no blood, the cough had largely disappeared, and the patient insisted on leaving the hospital in the belief that he was cured. He was persuaded to remain four days longer and on January 14, 1904, could no longer be detained, and was lost sight of. When discharged he was free from cough, his sputum was mucopurulent, but in slight quantity, and he himself felt perfectly well. The respiratory sounds over the area of former consolidation were still rough, and moist râles could be heard; the percussion note was almost similar in like positions on the right and left sides.

In looking back upon this case, it is natural at once to suggest that the condition was one of bronchopneumonia, with delayed resolution, the latter taking place finally at a time coincident with the administration of potassium iodide. This appeared to us so unlikely, however, that we excluded it in favor of less unlikely conditions. The duration for at least twelve weeks without seriously affecting the general condition of the

patient, the free expectorating of prune juice fluid, beginning with the eleventh week of the disease, and the prompt, and seemingly almost complete recovery from active symptoms within a week of the first administration of potassium iodide, all seemed to point to a condition other than that of a simple bronchopneumonic consolidation.

Malignant disease it certainly was not in the light of the result of treatment. Equally certain is the fact that we must now exclude tuberculosis, which, though sometimes remaining stationary under the influence of potassium iodide, is usually urged on into an acute exacerbation, and is never really benefited by any combination of the iodides.

We have remaining but one probable condition, pulmonary syphilis; and our diagnosis rests simply and solely up to the present moment upon exclusion and upon the therapeutic grounds. In speaking of this case to a genito-urinary specialist, we were received with the comment: "So, this is what the internist calls syphilis!"

We would reply: "If not syphilis, what else?" There are many discoveries made by so-called chance, and by so-called experiment, and some of our most valuable items of knowledge have been obtained by reasoning backward, as it were; this method being the only one that offered a purchase from which to reason and observe in the right direction.

Even in the absence of the classical eruption, and the evidence of a primary sore, and even lacking a general glandular enlargement (none of which we believe to be indispensable accompaniments of latent syphilis) we feel compelled to look upon this case as one of pulmonary syphilis, at first latent, and then manifesting itself by the symptoms of a localized pulmonary lesion. Until our friends, who have up to this time spent their lives in a vain quest for the causal germ of syphilis, proclaim the success of their pursuit, we shall consider it our duty from the double standpoint of the patient and the clinician to regard such conditions as respond promptly to treament by potassium iodide or mercury, and to no other, as luetic, provided, of course, that we find no evidence suggesting another condition as more probable.

It is interesting from the pathologic standpoint, and in view of Virchow's comment upon the occurrence of brown induration and pigment and its histogenesis, that so many of these cases present hemoptysis as a prominent clinical feature. Aufrecht's case is especially noteworthy in comparison with our own, in that the autopsy showed the presence of a tumor of coagulated blood, arching over the left bronchus, and pressing upon the tracheal wall. The tumor was formed "by an almost globe-like dilatation of the aorta, as large as a plum," communicating with the lumen of the arch by an opening one centimeter in diameter. The result of puncture in our case might well have been consequent upon the insertion of the needle into some such aneurismal clot, or equally well into a circumscribed extravasation, due, as suggested by Virchow, to an impediment to the blood stream. In the latter event the stage of the disease when observed by us must have been one antecedent to that of brown induration and its attendant pigmentation.

Stengel gives the post-mortem findings in one case of undoubted pulmonary syphilis, of which the clinical history was lacking. He also submits the clinical history of another case, first looked upon and treated as an instance of pulmonary tuberculosis, but recovering after six months of treatment with potassium iodide. The latter case is open to the objection, of course, that the improvement was so slow as to admit of question whether is was not a case of phthisis after all, recovering in spite of the use of potassium iodide.

Many cases of well recognized incipient phthisis do indeed recover within an even shorter period. In other words the improvement may or may not have been due to the antispecific treatment. Certainly, however, the iodide had no deleterious effect. Stengel also quotes the interesting case of Brambilla, of a supposedly tuberculous patient being given the mercurial inunction intended for a syphilitic in the adjoining bed, followed by the prompt recovery from all his symptoms. The clinical histories of such cases must have at least one important influence, in the direction of proving that a certain few cases, apparently tuberculous, will improve and convalesce symptomatically under antisyphilitic treatment. This once determined, the question as to whether we can rightfully call them instances of pulmonary syphilis, assumes secondary importance.

The probability approaches a certainty more nearly with each new case, and in due time a sufficient number of post-mortem records will have been obtained in cases that have shown just such a clinical history and the doubt will be dispelled. In the meantime the uncertainty will cause some hesitation in the positive diagnosis of incipient tuberculosis in subjects known to have or suspected to have a syphilitic taint.

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MEDICAL PROGRESS.

SURGERY.

Decapsulation of the Kidney.—The effect of decapsulation of the kidney on animals has been studied very carefully by G. HERXHEIMER and J. W. HALL (*Virchow's Archiv*, Vol. 179, No. 1). Most animals stand the operation well and albumin does not appear in the urine. A new capsule forms very rapidly; after twenty days it is very evident and usually thicker and more irregular than the original capsule. A moderate number of small vessels were encountered, but in no place did these vessels penetrate into the interior of the kidney and form anastomoses with the renal vessels. A number of rabbits were treated with chrome alum before the operation in order to set up a nephritis and study the effects of decapsulation upon this. The operation was also tolerated well but the amount of albumen excreted was just as high as in the animals which were not operated. It required an equally long time for both sets of animals to recuperate, so that, at least in this form of nephritis, no good effects can be expected from decapsulation.

Intestinal Anastomosis by the Connell Suture.—H. H. SINCLAIR (*Med. Rec.*, February 4, 1905) describes three cases in which he performed intestinal anastomosis by the Connell method. The patients all made good recoveries and the author suggests that perhaps the lack of a simple method of doing an intestinal anastomosis has been one of the causes of mortality in strangulated hernia and volvulus.

Intermuscular Hemorrhage from Muscular Action.—A. H. SMITH (*Med. Rec.*, February 4, 1905) says that a sharp distinction is to be drawn between those cases in which the escape of blood within the intact sheath of a muscle is the important factor, and those in which laceration of muscle and sheath plays the principal part. Contrary to what might be expected, the former sort of cases may give rise to greater immediate suffering and more lasting impairment of function than the latter. While almost any muscle may be the seat of rupture, those that act through the tendon Achilles are especially liable to the accident. The strain on this structure in walking is at certain moments equal to three times the weight of the body, and if it is brought to bear suddenly, the tendon may be ruptured, or some of the muscular structures which act through it may give way. Incoordination of the fibers of a muscle also may cause some of them to rupture, and this irregular contraction probably is the cause of the lesion in those cases in which there is no conscious muscular effect at the moment of the accident. The author describes two cases of hemorrhage into the calf muscles due to muscular action, and two other cases, affecting the gastrocnemius and the sternomastoid muscles respectively, in which there was a demonstrable rent in muscle and sheath. In the former two cases the effusion of a moderate amount of blood into the confined space afforded by the intact sheath caused much pain and protracted disability, whereas in the latter the suffering was comparatively slight, and recovery was relatively prompt.

The Infection of Physicians by Syphilis.—The seriousness of this condition is ably discussed by A. BLASCHKO (*Berl. klin. Woch.*, December 26, 1904), who had twelve physicians as patients with this disease, acquired during their work. In most of them the primary lesion was on the finger, and not fully recognized at first. Three conditions must be differentiated from chancre in this region, herpes, anatomical tubercle and the soft chancre. Herpes in most instances may be readily enough distinguished, but more difficulty is encountered in the presence of the other two. In some cases the primary lesion may be small, causes little disturbance and heals rapidly without forming a scar. In these cases the development of general symptoms or an indolent bubo first calls attention to the disease. In one case there was absolutely no evidence of external infection, and the writer thinks that this may be one of a class where the primary lesion is never developed and where it is possible that the infection took place through an insect sting. The chief source of infection seems to be wounds, either accidental and unnoticed, or made by the puncture of instruments used on syphilitic patients. Hang-nails are a frequent source of infection when making gynecological or other examinations, or when attending syphilitic women during an abortion. Blaschko thinks that there is no absolute way of preventing infection. The vigorous scrubbing which is indulged in before operation is a frequent source of wound production, and where the skin of the hands is very tender it should be avoided and washing with marble soap without a brush be deemed sufficient. Moreover, it is better to avoid carrying virulent germs about on the hands, by a thorough cleansing after operation on an infectious case. The use of rubber gloves is also warmly recommended. Small wounds should be carefully cleansed and painted with a two to three per cent. solution of nitrate of silver. Suspected punctured wounds may be treated with tincture of iodine. The writer does not agree with the generally accepted theory that extragenital syphilis is more severe than the other type, and none of his patients developed any complications. Treatment should never be instituted on mere suspicion, but the appearance of characteristic signs should always be awaited. The question of stopping his practice is a most important one, but if the proper precautions are observed there is no reason why an infected physician need cease to work. Otherwise he must observe the same restrictions as are incumbent upon other individuals.

Cauterization by Zinc Chloride.—The action of this drug on wounds as a protective against infection has been studied by L. BROSE (*Deut. med. Woch.*, December 22, 1904). His experiments were conducted on rabbits and on the bacteria themselves. The author finds that even in concentrated solutions the zinc chloride is devoid of antiseptic properties, but that the eschar which results when brought into contact with aseptic wound surfaces prevents subsequent infection. The penetrating powers of this substance are so marked that it protects the wound even when applied a full minute after the application of the infectious agent. The slough produced is not a culture medium, for bacteria and other pathogenic organisms cannot be recovered from it for two or three days after they have been applied.

Marked Mental Improvement Following Operation for Depressed Fracture of the Skull.—B. VAN D. HEDGES (*Med. Rec.*, January 28, 1905) describes the case of a boy of eight years, who four years previously had been struck on the head by a brick, which had caused a marked depression in the bone at the seat of the injury. From this time there was evidence of a change in his mental and moral make-up. Intellectually he was at a standstill and all moral sense appeared to be lost. Over a year ago the author removed the area of depressed bone, and since that time the boy's mental and moral condition has become normal. The depression was about one inch in diameter, one-quarter inch in depth and situated in the median line, along the

course of the sagittal suture, the center of the depression being one inch and a half anterior to the vertical point and four and one-half inches from the glabellar point.

Trendelenburg's Operation.—A critical study of of the use and abuse of this most excellent and widely used technic for the treatment of varicose veins is of the utmost value. VIANNAY (*Revue de Chirurgie*, January, 1905) presents an exhaustive treatise on the subject. Not the least interesting of his chapters is that which is devoted to a consideration of the condition of the operative intervention before the time of Trendelenburg. He concludes that in France, direct intervention was practised by means of ligating the internal saphenous vein either with or without resection of the vessel. Gagnebe in 1830, Velpeau in 1838 and Ricord in 1839 were among the French operators who worked on this technic. Shede, Riesel, in Germany, Steel, Colley, Anandale, in England, also practised the same operation. Viannay concludes that when one has decided to interrupt the continuity of the internal saphenous vein, in the case of a varix, which shows the presence of valvular insufficiency, all intervention directed upon a single point in the vein is insufficient and illusionary, with the single exception of resection high in Scarpas triangle. Although in many cases this intervention may suffice, it is usually better to interrupt the internal saphenous in a series of sections, or as the author states by a veritable luxury of precautions, to exsect it entirely. These conclusions are corroborated by operative results. Not having had a sufficient number of cases from which to deduce conclusions to present practical results, no figures are given by the author. The monograph is full of interest and the conclusions not based on personal observations are the direct results of careful study of the statistics of others.

Enlargement of the Spleen Simulating a Pelvic Growth.—Splenomegaly is ordinarily not easily confounded with pelvic growths, but the following case, as recorded by A. J. STURMER (*Brit. Jour. of Obst.*, October, 1904) shows that such a mistake is possible. Elsie E., aged twenty-five years, multipara, native of India, was admitted to the Government Maternity Hospital, Madras, June 30, 1904, complaining of a painless swelling of the abdomen, which had existed for sixteen months. She had not menstruated in two years and four months. Micturition was normal. She had gradually lost flesh. There had been fever off and on for a year previous to her marriage, and occasionally afterward. Malarial fever was very prevalent in the woman's home. At the time of admission to the hospital the patient was well-nourished, not anemic; bowels regular. Pulse 108, temperature normal. The abdomen presented considerable enlargement; a large irregular mass was found to occupy the right iliac and lumbar regions encroaching upon the left side, extending from the pubes to three fingers-breadth below the ribs. It filled more of the right side of the abdomen than the left. The tumor was hard and freely movable, especially toward the right side. A distinct fluid thrill could be elicited in both flanks. It could not be determined whether this was in the tumor or free in the peritoneal cavity. There was dulness all over the tumor, but the flanks were tympanitic. The hand could easily be passed under the ribs over the top of the tumor, and could be made to pass underneath it, therefore it was decided that it did not take its origin from above. Vaginal examination was practically negative. On opening the peritoneal cavity some fluid came away, and a bluish-red mass presented. On passing the hand into the right iliac fossa the splenic notch could be made out, as it rested upon the right ilium. Above the spleen did not pass under the ribs; incision was therefore enlarged, and finally the spleen was delivered. The pedicle was long. The splenic artery was about the size of a goose-quill, divided into two branches before entering the spleen, and these two branches were first tied, and then the main vessel ligatured. Finally the spleen was cut away. The appendix was found to contain a round worm—not an uncommon experience; it was cut across and the outer portion of the worm removed. The spleen weighed four pounds three ounces, and was remarkable for the number of notches,—three or four deep cuts at its edge,—near the usual notch. On leaving the hospital the patient was strong and able to walk about, to all intents in good health and had gained considerably in weight.

Surgical Treatment of Chronic Dyspepsia.—The progress made in the treatment of a rather typical form of gastric dyspepsia has been marked by continued growth during the last few years. JOHN G. SHELDON (*Annals of Surgery*, January, 1905) states that it is generally admitted that from fatigue of the gastric muscle followed by gastric atony and elongation of the gastric muscle fibers, enlargement of the cavity does occur. When this condition is of but temporary duration, special attention has been given to derangements of the secretory functions of the organ. Treatment by various disgestive ferments often affords relief in these cases, especially if they are seconded by antacids. Mayo says that it is the mechanics of the stomach that are usually at fault and not its chemics. Einhorn has shown that even achylia gastrica can occur and produce no symptoms if the motor function of the stomach is not impaired. The succession of changes which take place in these long-standing cases of chronic dyspepsia, due to muscular atony, seem to the author to be as follows: There is deficient drainage, resulting either from pouch formation or from lack of muscular force to expel the contents. The retained material undergoes chemical changes which produce products having a local effect on the gastric mucosa. These are absorbed and are capable of producing more or less marked general changes. As time goes on the inflammation of the mucosa becomes chronic, or, in other words, chronic gastritis develops. It has long been recognized that severe cases of tetany may be due to gastric toxemia. The author believes that many nervous symptoms, less severe than tetany, but due to disturbances of a like quantity but of a less quantity are often manifested in cases suffering from dilatation. This covers that great field of debilitated individuals who are known as neurasthenics. It has been believed for too long that the nervous symptoms are primary and that the dyspepsia is secondary, although it must be admitted that gastric symptoms may very definitely and certainly be produced by primary nervous disturbances. Regarding the experiments which have been carried out to show the effect of nerve section in animals, all of which have tended to show conflicting conclusions by their authors, Ewald says all these experimental stimulations have had an indefinite and uncertain value. We have many examples of tetany being relieved by drainage of the stomach and also of the disap-

pearance of nervous symptoms following drainage in cases of obstructed pylorus. As to the cause of the chronic constipation, which is almost always associated with neurasthenia, it has been claimed that the small amount of solid material which these patients pass into their gut, is responsible for the condition. Lohrisch has shown that the absence of sufficient dry residue in the intestines inhibits the growth of the intestinal flora and diminishes the production of indol, skatol, etc. The author, however, believes that the constipation is the direct result of defective drainage of the stomach and is not due to secondary causes. From a series of cases and from a study of those of many other surgeons he concludes that any case of severe and long-standing dyspepsia, that has resisted the usual methods of treatment and that has shown no permanent improvement after the stomach has been rested for two weeks by rectal feeding, should be subjected to gastro-enterostomy.

An Operation for Inguinal Hernia.—Multiplication of technics intended to simplify the treatment of characteristic lesions shows that the ideal has not yet been reached. CHARLES J. SCUDDER (*Annals of Surgery*, January, 1905) gives his interpretation of the essential details of Bassini's operation. He has never yet found it necessary or advisable to excise the veins of the cord. He considers the transplantation of the cord of little importance, although he is more and more inclined not to transplant it. He keeps his patient in bed for two weeks, on a bed-rest for the third week and advises a bandage for one month simply for the comfort of the patient. He exposes the region by the usual incision, incises the external oblique, in the usual way and frees it for about two fingers' breadth around the cut edges. The cremaster is split parallel to its fibers and separated from the sac and cord. The sac is developed by blunt dissection. It is then opened, emptied and divided transversely down through the cord and its vessels. The proximal part of the sac is isolated from the cord and from the abdominal muscles. He considers that the purse-string suture may slip. He consequently sews the sac across its cut end over and over. The distal portion of the sac, namely the scrotal part, he has ordinarily disregarded, except to gently curette its inner surface. It is unnecessary to remove it in most cases. Downward traction upon the proximal portion of the sac facilitates the suturing of the peritoneum. The cord and distal portion of the sac are now lifted from their bed if it is decided to transplant them. The sutures are then placed and it has been the author's custom always to put one or two external to the spot where the cord pierces the peritoneum. The external oblique fascia is closed over the cord by a continuous chromic catgut suture, taken with a loop or hemstitch. This overlaps the two layers of fascia as satisfactorily as is done by the mattress suture of Halstead. The skin is closed by silkworm gut, which is covered with sterile gauze. Silver foil, ointments, paste and powder have no advantage over this dressing. Absolute hemostasis, ample cutaneous incision and minimum of trauma to the cord are essentials to success.

Treatment of Fracture of the Lower Jaw.—Although this bone is known to heal more kindly than any other in the body, its treatment after fracture has been the source of many vexatious discussions. RUDOLPH MATAS (*Annals of Surgery*, January, 1905) states that the ideals aimed at are accurate reduction combined with suitable provision for the gygiene of the mouth. The meeting of these conditions should not interfere with the oral and maxillary functions. He further states that this problem has taxed the originality and resources both of the practical surgeon and of the dental specialist. No less than 15 articles on fractured lower jaws have appeared in journals from January to September, 1904. Celsius wired the adjoining teeth. Angle and Lohers perfected this method by the use of clamps and bars to lock the teeth together. Moulded dental splints, which accurately fit over the crowns of the teeth cast on molds of the teeth made from plaster-of-Paris impression usually give far better results than the wiring method. The difficulty, however, with these types of splints is that they require a specialist for their preparation. The technic of the author is devised particularly to meet the want of the majority of people who enter a large hospital service. The majority of these patients have in general hospitals to be treated by men of ordinary experience and without the necessary training to prepare a dental splint. Ninety per cent. of these fractures occur in adult males. The splint is described as follows: It is constructed on the principle of a clamp which holds the entire projecting arch of the jaw from the chin to the angles firmly in the grip of a flexible mouthpiece, which fits like a gutter over the entire dental arch, and of an external plate or chin cup, which extends from the symphysis to the angle. The mouthpiece and chin plate are both detachable. The chin cup is made adjustable to various degrees of prognathism by a sliding-joint fixed by a pin and thrumb screw. The mouthpiece is horseshoe in shape. It is hollowed in three planes to fit loosely over the crowns of the teeth. The softness and flexibility of which the splint is made allows the operator to adjust the splint accurately to the lower dental arch. This splint is made in three different sizes. The chin piece is made of perforated aluminum and is shaped to fit the contour of the jaw. It has a sliding-joint upon which it moves backward and forward. The clamp which holds the two pieces together is made of soft steel and consists of an upper and lower limb screwed together in front of the mouth. The upper limb projects from the middle of the mouth and is so arranged that dribbling is prevented and that eating and drinking is made possible. The pressure required to hold the jaw in the grasp of the two pieces is obtained by a screw attached by a swivel-joint to the upper limb of the clamp. When the splint is applied, the contour of the dental arch should be restored when the fracture is reduced and while the bone is held in place by combined internal and external manipulation; one of the metallic dental gutters is selected, depending on the age of the patient, and fitted on the arch of the teeth. It can be molded with the fingers. It may be necessary, in the case of destroyed teeth to fill the gutter with a modeling wax, such as is used by dentists. The outside clamp is then adjusted and padded and the clamp is tightened. The patient is then taught to irrigate his mouth, which should be done every hour or so. If the contusion of the soft parts has been extensive, care should be taken to relax the pressure of the screw; otherwise injury may be done by the unyielding splints. In this case, until the swelling has subsided, a Barton-Gibson, or sling-bandage, may be used to reinforce the splint. This article is illustrated very fully.

Hepatic Wounds.—With the rapid evolution of abdominal surgery, the question of recognition and treatment of hepatic injuries has received increasing attention. BENJAMIN T. TILTON (*Annals of Surgery*, January, 1905) states that the liver is injured with greater frequency than any other abdominal viscus. Of 365 cases of subcutaneous injuries of solid viscera the liver was injured in 189. The spleen, kidney, and pancreas combined in but 179. The factors which favor a high percentage of injury are (1) that it lies wedged between the ribs and vertebral column and (2) that it is very heavy and elastic and only slightly movable. It is nine times as heavy as the spleen and ten times as heavy as the kidney. Furthermore, the physiological function of digestion renders it more liable to injury, since the gland is engorged with blood. Again the organ is particularly liable to disease. Alcoholism, tuberculosis, malarial lesions, new growths and the production of fibrous tissue rendering it even more friable than in its normal condition. Chiari has reported a case of carcinomatous liver occurring when the patient was simply turned over in bed. The author reports a number of cases of traumatisms to the liver which were treated surgically in his service at Bellevue, and from a study of these he deduces the following data as to symptoms: Escape of venous blood with or without bile, particularly in scab wounds over the region of the liver is a very important sign. Hepatic injuries usually cause pain to radiate to the right shoulder. Inasmuch as there is also local pain on respiration, the chest does not move as much on the right as on the left. This may lead to a misconstruction of the diagnosis, for it suggests to the casual observer thoracic injury. The blood gravitates into the right iliac fossa and may give well-marked dulness. Disappearance of liver dulness is due to beginning tympanitis and is therefore not of great diagnostic importance. Jaundice is occasionally present, but usually does not appear until the second or fourth day. Ludwig found it 24 times in 267 cases. Its presence usually signifies injuries of the bile duct. In very severe cases the prognosis is exceedingly grave, no matter how early intervention may have been practised. Hemorrhage was the cause of death in 69 out of 162 fatal cases. Abscess and peritonitis are of course responsible for many deaths. In all probabiliy, in the opinion of the author, there are many mild cases of liver laceration which go on to entire recovery without ever having been diagnosed. Of 25 cases of hepatic injury occurring in the last ten years in the New York hospitals, which were uncomplicated by serious lesions of other abdominal organs, 12 were ruptures, 9 gunshot wounds, 4 stab wounds. Eleven deaths resulted, being a mortality of 44 per cent. The modern tendency is toward early laparotomy. The very important and never-failing rigidity of the abdominal muscles is probably the most important indication for laparotomy. It may be that operation must be performed simply for the control of hemorrhage, the extent of which is indicated by the increasing dulness of the iliac fossa. Sutures or gauze packing control bleeding well. The thermocautery is of very little value. The author concludes that the prognosis of the severe cases of wounds of the liver alone has improved under early operative treatment. This is inaugurated for the control of hemorrhage, for thorough examination and for prevention of infection. Mild cases without symptoms of collapse or internal hemorrhage should be treated expectantly. The mortality of hepatic injuries will probably diminish very considerably as early operation is more generally resorted to.

Ureteral Catheterization for Therapeutic Measures.—It is conceded by all that the segregation of the urine by this method has a far-reaching value for diagnostic purposes. Few people have, however, employed it as yet as a therapeutic measure. G. V. ILLYES (*Deut. Zeitsch. f. Chir.*, January, 1905) reports seven cases from the clinic of Dollinger in whom very marked improvement had been noted as a result of ureteral irrigations. In one case the results were astonishing, the procedure having to all appearance cured the individual of a pyelitis. In the remaining six there was a perceptible although a less-marked improvement. The author concludes that this method of treatment is more than justifiable as a means of preparing patients who are in a profoundly septic condition, for operation, since by washing out these pus capities, their system can in a slight measure rehabilitate itself and establish fresh resisting powers which may be sufficient to determine between life and death after operation. He considers the danger of the technic as trifling and believes that in proper hands its simplicity and ease of execution is so great as to warrant its more general employment.

MEDICINE.

Albuminuria after Palpating the Kidney.—An interesting observation is recorded by J. SCHREIBER (*Zeitsch. f. klin. Med.*, Vol. 55). If a floating kidney be palpated in the usual manner, albumin will almost always appear in the urine, even where only a small portion of the kidney can be grasped between the fingers. The color of the urine, voided after palpation, is generally somewhat paler, and microscopical examination shows an abundance of epithelial cells from the pelvis, ureter and bladder, cylindroids, red and white blood cells, but hardly ever casts. The albuminuria is probably caused by the passage of serum from the capillaries into the tubules. Probably some lymph also reaches the latter since there frequently is no relation between the degree of pressure exerted and the amount of albumin. The observation is of great clinical value, since a doubtul organ in the abdomen may be safely diagnosed as kidney, if albuminuria follows after palpation.

Complications of Acromegaly.—Several cases of acromegaly, which may throw some light upon the pathogenesis of this peculiar disorder, are described by E. STADELMANN (*Zeitsch. f. klin Med.*, Vol. 55). In one marked polyuria and glycosuria were concomitant symptoms. The patient died of diabetic coma but no changes could be found in the pancreas at autopsy. The pituitary body was converted into a large tumor which proved to be a malignant adenoma on section. A second case was complicated by hypertrophy and dilatation of the heart, intra- and extrathoracic struma, protrusion of the eyeballs and moderate arteriosclerosis. A benign adenoma of the hypophysis and a marked interstitial pancreatis were found at autopsy, yet the patient had never passed any sugar with his urine. These two cases make the relation between pancreas and diabetes more doubtful than ever. Both cases presented the typical symptoms of acromegaly, but the fact that the bones were more hypertrophic in one and the soft parts in the other, make it desirable to speak of two types of this disease.

Struma and Cataract.—Turbidity of the lens of the eye is often associated with diabetes, but it is less commonly known than a number of other affections, notably hypertrophy of the thyroid, also play an etiological rôle. A. VOSSIUS (*Zeitsch. f. klin. Med.*, Vol. 55) believes this is due to some toxin secreted by the gland. All patients observed were of the female sex and the goiter was large and complicated by stridor and compression of the trachea. As a rule, the cataract affected only the nucleus and the perinuclear zones so that the peripher remained clear.

Polycythemia and Splenic Tumor.—All the recorded cases of polycythemia, more commonly known in this country as Osell's disease, have been tabulated by W. WEINTRAUD (*Zeitsch. f. klin. Med.*, Vol. 55). The majority of patients were males, usually in middle life. An etiological factor could not be discovered and it is almost certain that alcohol, syphilis or malaria play no rôle. The subjective symptoms may be divided into those due to deficient blood-supply of the brain (attacks of unconsciousness, headache, vertigo, tinnites, vomiting and general depression) and into those caused by the enlargement of the spleen (pressure in the left hypochondrium, pains, due to perisplenitis, gastric and intestinal disturbances). The most prominent objective sign is the cyanosis. The color of the skin is not, however, blue but more of a violet, and suggests pronounced hyperemia. The mucous membranes of the lips, tongue, gums and vocal cords are usually of a dark cherry-red. The spleen is often so large that a leucemia is first suspected. In the few cases with autopsy notes only a simple hyperplesia of the spleen could be detected but in one instance tuberculous changes were found in this organ. It is extremely doubtful, however, that this has any bearing on the condition, for many similar lesions are reported without blood changes. The liver is often enlarged and of soft consistency. The most characteristic change in the blood is a marked increase in the number of red cells and the percentage of hemoglobin. The highest figures recorded are 12 million for the former and 200 per cent. for the latter. The red cells rarely show morphological changes and the leucocytes are frequently increased, yet a differential count does not vary much from the normal. The specific gravity and dry residue usually fall within the normal limits while the amount of albumin may even be subnormal. Symptoms appearing later in the course of the disease are dyspnea, hydrops and albuminuria of unknown cause since albumin is only present in traces, with at most a few hyaline casts. The blood-pressure was found increased by some, normal by others. A coincident uratic diathesis (gout, renal stones) is not rare, but probably due to the continuous leucocytosis with its increased breaking-down of nuclein bases. A rational therapy does not exist, but good results frequently follow repeated venesections. Polycythemia may also occur without splenic tumor, but is then usually due to intoxication, with carbon monoxide or phosphorus, to congenital heart-lesions or to high altitudes. The true cause of polycythemia is not known, but probably the destruction of red cells does not go on as rapidly as in normal blood.

Relation of Tuberculosis to Pseudoleucemia.—H. FALKENHEIM (*Zeitsch. f. klin. Med.*, Vol. 55) reviews the literature upon the connection between tuberculosis and pseudoleucemia and finds that upon first sight intimate relations seem to exist between the two conditions. A number of cases are on record where even the pathologist believed the glands were typical of pseudoleucemia, yet where tubercle bacilli were found in the tissues. The belief is gaining more and more ground that at least a certain percentage of cases of lymphadeny, running with intermittent fever, are tuberculous affections. Sternberg has recently described changes in the lymphnode, supposed to be characteristic for tuberculosis. The lymph-spaces are dilated, the endothelial cells proliferated and within the stroma there are found, besides the usual lymphoid cells, groups of large, uni- or multinuclear cells with abundant protoplasm and round or indented, intensely staining nucleus containing nucleoli or karyokinetic figures. In ten out of fifteen cases, unmistakable signs of tuberculosis were present in other organs and tubercle bacilli were occasionally found in the glands. Although many writers have confirmed the observations of Sternberg, the author does not believe that the evidence is conclusive. In most cases, the tuberculous changes were more recent than the lymphatic hyperplasia, and there is no reason why one may not assume that the tubercle bacilli have been passively transported into the glands by way of the lymph-channels. Reed has injected glands with typical changes into guinea-pigs and has given the patients tuberculin injections, always with negative results. Finally, the cells of Sternberg have also been found in lymphosarcomata. It need not surprise that a body weakened by a malignant disease should occasionally be invaded by tuberculosis, but it is wrong to attribute the former to the latter for this reason.

Fever in Syphilis of Liver.—An important fact to remember in cases of fever of unknown cause, is that syphilis of the liver may be responsible for the rise. F. KLEMPERER (*Zeitsch. f. klin Med.*, Vol. 55) states that the fever is intermittent or remittent in type and frequently accompanied with chills or chilliness, but does not have the regularity of malarial fever. Attacks of profuse nocturnal perspiration frequently molest the patients. The liver is enlarged, but no necessarily irregular, and some tenderness may be present, so a diagnosis of liver abscess or suppurative cholecystitis is made. Other cases are treated a long time for malaria, tuberculosis or sepsis without improvement. The effects of mercury and iodide of potash are indeed remarkable, for a fever which has lasted for months may disappear in a few days. Similar symptoms may occur with syphilis of the lungs, which is usually treated for tuberculosis and with cerebrospinal syphilis. The pathological findings are generally gummata, which give rise to fever as they break down.

Theory of Infection by Tuberculosis in Children.—It has been claimed by v. Behring within recent years that in adults, infection with the tubercle bacillus does not necessarily produce phthisis. He believes that sometime during early life there has been a tuberculous infection, which may have been latent or not given any outward signs of its presence, and that this is what predisposes to the invasion of the organism later in life by the same disease. The same infantile infection may also on the other hand bring about a condition of immunity against later infection. H. BEITZKE (*Berl. klin. Woch.*, January 9, 1905) claims that v. Behring's theory remains unsubstantiated by facts and rests purely on a speculative basis. The writer undertook to demonstrate this latent form of tuberculosis in infancy by a search

for the tubercle bacilli in the blood of infants which had died from other disease without any gross evidences of tuberculous lesions. As the bacilli are believed to reach the blood through the intestinal tract, it seemed probable that they would be found in the venous blood mixed with the lymph, or in the right heart. The blood was accordingly abstracted under proper precautions from the right ventricle and injected into guinea pigs. Of 98 cases which were available, only 48 proved of any value for the purposes of the investigation. Control tests with cases which had died of tuberculosis, all gave positive results. In one animal which died spontaneously in four weeks after injection, no changes were found at the site of inoculation or in the regional glands, but the liver and spleen contained a large number of miliary nodules, and the lungs showed fine punctate hemorrhages. No bacilli were found. The case can only be looked upon as doubtful because the child from whom the blood was taken was only two days old at the time of death. In the other 47 cases the results were entirely negative in both animal experiments or by Jousset's methods of inoscopy. The writer thinks that the proofs of v. Behring's theories are in no way conclusive and until they can be made so, the theory formulated by this investigator cannot be accepted.

Graves' Disease and Adenoids.—That adenoid vegetations may be the cause of this condition, as well as of epilepsy and chorea, is the belief of B. HOLZ (*Berl. klin. Woch.*, January 23, 1905), who reports a number of cases to substantiate his statements. In two children with marked adenoid hypertrophy he found a well-developed exophthalmos and other signs of Graves' disease, but no cardiac symptoms or enlargement of the thyroid. In both, clearing out of the adenoids was followed within two weeks by a disappearance of the exophthalmos. In one child there was a recurrence of the adenoids within two years and also a reappearance of the exophthalmos, which also disappeared after the adenoid vegetations were removed for the second time. In another case, a marked case of chorea was likewise benefited. The author concludes that exophthalmos, if not merely a protrusion of the bulb due to mechanical reasons, may be considered as establishing the diagnosis, even if no other well marked signs of Graves' disease are present. This disease furthermore is essentially a toxemia of the central nervous system brought about by an abnormal internal secretion. It seems very likely that the disease can be produced by hypertrophy of the adenoid, and that this same factor may bring about epilepsy or chorea. Furthermore by the removal of these offending growths, all these conditions may be cured.

Fever in Cholelithiasis.—There can be little doubt at the present day that the fever accompanying gallstones is due to bacterial action, for trauma to the mucous membranes, experimentally induced in animals, is never followed by reaction. The most common germs found in the gall-bladder are the colon and the typhoid bacilli, but staphylococci, streptococci and even sarcinæ have been encountered. The pneumococcus, on the other hand, does not find conditions favorable for growth in the bile. There are about twenty cases on record where the bile itself proved sterile, but the interior of stones contained in the gall-bladder harbored germs. The different layers of the same stone were even found to contain different germs, thus proving that two different infections had occurred. Microorganisms may reach the interior of the gall-bladder in two different ways: they may descend from the radicals to the chief biliary ducts or else may travel from the papilla of Vater upward against the stream. The former is more common with infection with one germ; the latter with mixed infections. In almost all cases that were operated during the fever the bile was strongly infected; in the few cases reported with sterile contents the fever was usually due to some other lesion. According to H. EHRET (*Zeit. f. klin. Med.*, Vol. 55) even the normal bile contains a small number or germs; aerobic germs seem to predominate in the lower, larger branches, and anaerobic ones in the upper, smaller ones. Even in the case of streptococci, they are not pathogenic. Specific germs, such as the typhoid bacillus, have not been encountered in health. The presence of bacteria alone is not responsible for the fever, for many cases have been operated with distinct lesions in the gall-bladder and many pathogenic germs, yet perfectly normal temperature. This corresponds with the finding of pneumococci in healthy lungs and of diphtheria bacilli on healthy tonsils. Probably the body is already immunized in such cases or the germs are prevented from entering the system. It has been proven by animal experiment that germs injected into the gall-bladder disappear rapidly, even if the biliary ducts are ligated, so that there can be no doubt that the body is able to cope with a certain amount of infection. The degree of resistance offered by the body is therefore just as important in bringing about fever as the infection itself. The following experiments speak for an active immunization: (1) If colon or other germs be injected into the ear-vein of dogs it will be more difficult to set up a cholecystitis three or four weeks later and the animals will react with only very slight fever. (2) Animals which have gone through an experimental cholecystitis will hardly react to injections of coli, etc. (3) If new portions of the biliary system are affected after a cholecystitis has existed for some time, the subsequent symptoms are less severe. (4) If streptococci are injected where colon bacilli are already present, a new rise of temperature will generally be noticed. Typhoid injected into a gall-bladder containing colon bacilli is, however, often without effect. (5) The animals experimented upon usually survive the operation, unless operated during the attack. Many facts important in diagnosis may be adduced from the above observations. Thus, the presence of fever in the absence of other complications, invariably means an infection. Normal temperature does not exclude infection, but if it is certain that fever has never existed at a previous date, one may safely conclude that active processes are not going on in the biliary passages. The presence of fever or its height does not permit one to diagnose the exact lesions present since the highet temperatures often go with very slight changes and little or no temperature with advanced lesion. The following laws may, however, be laid down: (1) In doubtful cases a rise from the normal to a high temperature within a few days will argue against cholangitis or cholecystitis. (2) The prognosis is more favorable if the fever appears late in the course of the disease, but unfavorable if very chronic cases run with very high fever. Frequently repeated attacks of high temperature speak for chronic obstruction of the choledochus. (3) High continuous fever is not an unfavorable sign by itself. (4) If the fever stops by crisis the infected area has probably become sterile, while if it ends by lysis the biliary passages may remain infected for a long time. If the fever is complicated with icterus, the infection involves the finer ducts or at least extends into them; in the absence of jaundice, these ducts are probably free. The simultaneous appearance of fever and jaundice may also point to a chronic obstruction of the choledochus, espe-

cially if the attacks are sudden, regular and intense. Three stages may be recognized in almost every case of cholelithiasis: a prefebrile, febrile and postfebrile stage. A spontaneous cure is possible in the latter stage. As a rule it is not safe to operate during the fever since the body has not become sufficiently immunized to withstand contamination of the peritoneum or general infection.

Value of Ficker's Diagnosticum.—Ficker's diagnosticum, an emulsion of dead and broken-up typhoid germs, is recommended from many sides in the place of a living culture, for Widal tests, since it is permanent and will thus enable every physician to test for agglutination. Most reports are favorable, yet H. SELTER (*Münch. med. Woch.*, January 17, 1905) has tested quite a few blood-specimens where the Ficker test was negative, yet that with the living culture positive. During the height of the disease, both tests were generally positive, but in early and late cases the living bacilli are certainly to be preferred. In most cases it is better if a physician sends his blood-specimens to a laboratory, since here tests with the paratyphoid germs can also be made.

Typhoid Agglutination with Allied Germs.—An interesting contribution to the already extensive literature on typhoid agglutination is furnished by A. GRÜNBERG and P. JOLLY (*Münch. med. Woch.*, January 17, 1905). These authors found that the agglutination of the blood from different cases of typhoid varies considerably and stands in no definite relation to the severity of the disease so that it is well possible that a mild case will agglutinate strongly and a severe one moderately only. Even the number of typhoid bacilli found in the blood after blood cultures will not give an idea of the patient's condition. The blood of positive typhoid cases was also tested with paratyphoid germs and positive agglutination was obtained in as high as 70 per cent. In some of these, the paratyphoid agglutination was much higher than the typhoid agglutination even though it was positively proven by blood-culture that the disease was typhoid. In 55 per cent. the colon bacillus was strongly clumped, and in 22 per cent. the bacillus enteriditis of Gärtner. It follows that the Widal reaction is not absolutely specific, and that only a blood-culture will positively determine the germ which causes the disease.

X-Ray Treatment of Leucemia.—Nicholas Senn, in 1903, reported a case of leucemia successfully treated with the rays. In 1904, Bryant and Crane reported two cases of leucemia with recovery. These were also subjected to the X-ray. J. C. G. LEDINGHAM and R. G. MCKERRON (*Lancet*, January 14, 1905) report the results of a similar treatment of splenomedullary leucemia occurring in a boy eleven years of age. The splenic enlargement was enormous and the blood picture was absolutely typical. The abdominal distention was marked, the lower border of the spleen reaching to within a finger's breadth of the pubes. There were 3,570 red cells per cubic millimeter, 2,304 white cells, hemoglobin 80 per cent. The temperature was elevated when the boy was admitted to the hospital, but after staying in bed for a day or so, it became normal. It was noticed that this occurred every time that the patient was allowed to get out of bed. Arsenic was badly borne and had to be given up. For the one and a half years previous to the time that he was in the hospital wards, there had been but little change in the boy's general condition except for the fact that the spleen had grown larger. During the six months prior to X-ray treatment, the blood showed the following average count: White cells 200,000, with variations of 40,000 on either side; red cells 3,300,000. The ratio remained at the fairly constant figure of one to 15. Hemoglobin percentage taken by Haldan's instrument remained fairly constant at about 55 per cent. The result of the differential counts are given in the paper in the minutest detail. Following Senn's methods, the rays were applied over the spleen and the lower epiphysis of the femora. The exposures lasted ten to fifteen minutes every other day. Through three months of treatment, no constitutional effects at all were noted aside from a slight prickling sensation. This condition was in marked contrast with those produced in the cases of Senn and Bryant. The curves presented show that the leucocytes came down in six weeks to 23,000. The red cells during June, July and August averaged 4,500,000. The hemoglobin, however, remained stationery. It must not be forgotten that arsenical treatment may produce similar changes. Extraordinary as the results of the rays were upon the blood picture, they were even more so in their action upon the general condition of the patient. From having been bedridden, he was within a month able to go up and down stairs. At the beginning of the treatment, his maximum girth was 32 inches. On September 24 it was 26½ inches. There was a corresponding gain in weight. The following theories have been suggested to explain the mode of action of radiotherapy in leucemia. Senn believed that his results were due to antiparasitic action, and if Lowit's views on the etiology of leucemia are correct, this may seem plausible. Mosse and Milchner, working with rabbits found alterations in the lymphoid and myeloid elements of the marrow under the X-ray. The experiments of Joachim and others would seem to show that all the bone-marrow in the body would have to be exposed to the rays in order to produce results. Finally, Lepine and Boulav have shown that enzymes can be influenced by the rays, and since Ehrlich holds that an enzymes may be responsible for the condition, it is possible that its destruction prevents the further influx of leucocytes into the system.

PATHOLOGY AND BACTERIOLOGY.

Vital Examination of Leucocytes.—If a moist blood-film be examined over a hanging-drop chamber, so as to retard drying, the ameboid motions of both multi- and uninuclear leucocytes may be demonstrated for hours, sometimes even for days. A drop of water placed in the bottom of the chamber will cause the leucocytes to swell up, and will impart very rapid oscillating motion to the granules. The same may be seen in the pus cells of cystitis or gonorrhea, and is a sign that the cells are losing their vitality. A new method of staining the elements of the blood has been discovered by D. ROSEN and E. BIBERGEIL (*Virchow's Archiv*, Vol. 178, No. 3). A solution of the dye employed is simply spread out in a thin film upon a cover-slip; over this the blood is spread and the specimen then examined in the hanging-drop, before the blood has dried. If a mixture of pyronin and methyl-green is employed, the nuclei will first appear red, later green. Even in the later stages, a delicate red network arranged like the spokes of a wheel, will appear within the nucleus. The blood-platelets also show a red and a green substance. All dyes have a deleterious action upon the leucocytes, but the acid ones are more injurious than the basic. If eosin be employed, it will first

dissolve in the serum, so that the cells appear to float in a pink fluid. Soon the leucocytes will swell up and appear rounded and the granules in their interior will become very active. The lymphocytes never show this phenomenon since their protoplasm does not contain true granules. The same applies to the lymphocytes and myelocytes of the lymph-nodes and bone marrow. The granules generally take up the dye soon after the cell has lost its vitality. Basic dyes first tinge the protoplasm, then the nucleus, but the latter will retain more of the dye. Neutral dyes are split up into their component parts before the nucleus is stained. The protoplasm is first tinged slightly with the mixed dye, then the nucleus takes up the basic dye. The neutrophile granules become decolorized later, so that they appear as if only the basic dye had been employed.

Organic Phosphorus in the Urine in Pathological Conditions.—The determination of the inorganic P_2O_5 cannot be regarded as a true index of phosphorus metabolism, according to D. SYMMERS (*Jour. of Pathol. and Bacteriol.*, January, 1905), since an appreciable and important amount of P_2O_5 in organic combination is excreted in the urine in various pathological conditions, so that frequently 25 or 50 per cent., and in occasional instances, almost all the P_2O_5 appears in the organic state. The excretion of organic P_2O_5 is to an extent rhythmical, periods of excessive excretion alternating with what may be either retention or diminished production, so that in cases in which an average output is to be established frequent determination must be made. The excretion of organic phosphorus is pronounced in lymphatic leucemia, where there is a marked change in the ratios of nitrogen to organic phosphorus as well as an absolute increase in the percentage of organic P_2O_5 in the total P_2O_5, while the ratio of nitrogen to total P_2O_5, and so the inorganic P_2O_5 shows little if any departure from the normal. In nervous diseases of the degenerative type the absolute amounts of organic P_2O_5 as well as their percentage to the total P_2O_5, are increased, sometimes to an enormous extent. It seems impossible that such amounts could be derived directly from the obstruction of nervous tissues. In this connection the question of tropic influence assumes importance. It seems unlikely that the increased excretion of P_2O_5 could be derived from bone. The confirmation of this statement is seen in the fact that in osteomalacia the output of P_2O_5 has not been found increased. There is weight in the assumption that the increased phosphorus output depends upon general metabolic causes, probably in the waste of phosphorized endogenous compounds. The abnormal increase of organic P_2O_5 may be an increase in the production of phosphorized endogenous metabolic compounds, or an expression of lessened oxidation, with the inorganic phosphates as the end-product.

The Pathology of Pernicious Anemia.—A histological study of seventeen cases of pernicious anemia was made by G. L. GULLAND and A. GOODALL (*Jour. of Path. and Bact.*, January, 1905), from which the authors draw the following conclusions: The essential feature of the disease and the criterion in its diagnosis is, that it is a megaloblastic anemia. The widespread evidences of blood destruction occurring in liver, spleen, leucolymph glands and marrow, indicate abnormal vulnerability in the blood cells rather than a pathologically excessive leucolytic action on the part of so many diverse tissues. The accumulation of iron in the liver is due partly to the disintegration of weakened or weakly blood corpuscles by endothelial cells and leucocytes and partly (and to a much greater extent) to storage of iron, which is the product of red blood corpuscles which have been disintegrated by phagocytes elsewhere. This accumulation of iron in the liver is not peculiar to pernicious anemia, and is the normal result of the abnormal amount of blood destruction. There is no direct evidence of special disease of the intestine, and the intestine need not be the primary seat of toxin production, though in certain cases, and notably in bothricephalus anemia, it probably is. In some part of the body a toxin is produced which acts directly on the bone marrow, interfering with normoblastic blood formation, leading to megaloblastic formation, and acting with negative chemiotaxis upon leucocytes, especially of the neutrophile variety. The large old blood corpuscles produced by such a marrow, perhaps as much from their size as from inherent weakness, fall a ready prey to endothelial cells and leucocytes in the hemolytic organs, notably hemolymph gland, spleen and marrow. It is quite possible that certain individuals, from congenital defect in the marrow, may be specially prone to the disease, as there is little doubt that the megaloblastic degeneration represents a reversion to the fetal type.

The Plurality of Cytolysins in Snake Venom.—Of considerable importance from the standpoint of cellular intoxications are the result of the researches on the mechanism of the cytolytic activities of snake venom, conducted by S. FLEXNER and H. NOGUCHI (*Jour. of Path. and Bact.*, January, 1905). They find that venom contains solvents for the parenchymatous cells of several animals, and that considerable differences in activity in this respect occur, according to the source of the venom. The solvent action of venoms upon various kinds of animal cells is shown to be due, not to the presence of a single solvent, but to a number of solvents which are distinct one from another. The solvents for any given organic cell of one animal may be abstracted from venom by absorption without removing the solvents for the same kind of cells belonging to another animal species. Cytolysis is brought about through the interaction of amboceptors (of the venom) and complements of the respective animals. That the solution of cells is not the result of enzyme action is shown by the fact that the amboceptors for liver and testicular cells resist heat.

Dog-Tongued Elongation of Left Hepatic Lobe.—The variations of the size of the left lobe of the liver, sufficient to cause symptoms, have been recognized and reported in but one case, that of LANGENBUCH (*Annals of Surgery*, January, 1905). In this case the liver is described as a short corset organ in which in addition to the right lobe being pressed upward into the diaphragmatic space, the left lobe is pushed across in the left hypochondrium, where it spreads over the fundus of the stomach and over the spleen. The woman had had pain for eight years; she was thirty years old. While lying on her back the pain was almost intolerable. The treatment of this case consisted in resection of the left lobe. Ascites existed for a short time after operation. Hammond's subject was a girl, sixteen years of age. She had had a painless swelling of the epigastrium for nine years. She had never had any evidence of hepatic disease, but had suffered from palpitation of the heart, dyspnea and feeling of gastric distention. She was free from these symptoms when in an upright position and when the stomach was empty. Examination showed what appeared to be immensely distended stomach. The mass appeared to be influenced by respiration. The right hepatic lobe

could be felt just below the costal margin. The heart apex was heard best in the fourth interspace. The condition had been diagnosed as gastroptosis colon distention, hydatid cyst and malignant hepatic disease. The author considered it probably a cyst of the pancreas. The temperature and blood count were normal. The pulse in the sitting posture was 78 and in the recumbent 126. On abdominal section the left lobe was found to extend entirely across the lesser curvature of the stomach, into the left hypochondrium, where it was flattened out over the spleen. There were no adhesions. It could be lifted from its position easily. It was thin. The capsule seemed normal. There were no nodules or any evidence of pathologic change. The right lobe appeared normal, as were the other organs in the neighborhood. On attempting to replace this lobe, the respiration immediately became markedly embarrassed. The entire lobe was accordingly sutured to the abdominal wall. The results were perfect. The length of the lobar from the free margin of the liver to its apex was 6¼ inches, width 1¾ inches. Inasmuch as it has been shown by both Pronfick and Von Meister that resection of a part of the liver will be followed by regeneration, nothing could be gained by such operation, and ventrosuspension seemed the only practical course to take. While in this case the history shows that the deformity had existed from early childhood and had perhaps been congenital, there is no doubt that a gradual extension of this tongue from the main body of the liver had taken place quite rapidly in the last two years. The patient's occupation, that of a laundress, had caused sufficient trauma to encourage growth. It has been shown at autopsy that when the left lobe is deformed, it is usually folded upon itself and more or less incurved.

Morphology and Biology of Tubercle Bacillus.—The best medium for growing tubercle bacilli is coagulated blood-serum, according to E. LEVY (*Zeitsch f. klin. Med.*, Vol. 55). A pure culture can easily be obtained, if infected material is injected into guinea-pigs and the organs of the tuberculous animals are then transplanted on the serum. A new tube is inoculated every four weeks and the fifth or sixth generation will then grow luxuriantly upon agar, which should contain no more than two per cent of glycerin. The so-called spores, the author believes, are not really spores, but may be compared to similar structures better studied in actinomyces. Portions of the filament here have lost their contents by diffusion through the membrane or by retraction. What remains within the capsule of the tubercle bacillus is still capable of reproduction, even though the process is so slow that it cannot be observed under the microscope in the hanging drop. The occurrence of branching and of club-shaped ends makes it very possible that the tubercle bacillus is closely allied to the group of ray-fungi.

Para-Urethritis.—Associated with the urethra are often to be found a series of gland-like structures which may become of pathological significance in the presence of an infection. They are more frequently seen with hypospadias than in the normal penis, or when hypospadias is not present, on the lips of the meatus. They vary in extent from slight depressions to long ducts and may be independent of the urethra or connected with its lumen. J. W. CHURCHMAN (*Jour. Am. Med. Ass'n*, January 14, 1905) reports two cases of urethral infection which show that gonorrheal disease of these ducts may occur in the male and that it may manifest itself either during the course of an ordinary urethritis or before urethral symptoms have appeared. Para-urethritis in its early stages may simulate inflammatory lesions of the surface of the glans, notably beginning chancroid, chancre or herpes. Para-urethral infection, once it has become established, can be destroyed only with great difficulty, the organisms appearing in abundance even after cauterization of the duct. The author thinks that the infection can be overcome without surgical interference by persisting in conservative treatment and the continual existence of a neighboring focus of infection does not necessarily mean a bad urethral invasion if careful prophylactic measures are taken.

PEDIATRICS.

The Metabolism of an Artificially Fed Infant.—A careful study of the exchanges of matter and energy in his own artificially fed infant was made by F. TANGL (*Pflüger's Archiv*, September 30, 1904). Although born at term, the child was considerably below the normal weight, but was otherwise healthy. It was fed upon modified cow's milk prepared after the method of Székely and Kovács. The principle of this method depends upon the fact that by means of carbon dioxide, cow's milk under great pressure will precipitate its casein. Skimmed milk is warmed to 60° C. and then put under a pressure of 20 to 25 atmospheres, when with the aid of CO_2 the casein is thrown down. Two parts of the whey are then mixed with one part of cream and then 1½ per cent. of equal parts of milk and cane-sugar is added. This mixture is then pasteurized in bottles. The virtues of this preparation are supposed to lie in the removal of the superfluous casein without the addition of any foreign agent, the CO_2 producing no change in the milk, and being itself easily removed. This preparation has the following composition: Water, 87.2 per cent.; fat, 3.7 per cent.; casein, 1.5 per cent.; albumin, .9 per cent.; sugar, 6.3 per cent., and ash, .7 per cent. The author found that this food was well assimilated by his infant, which, although delicate, was nourished as well as a normal child and, with the exception of the inorganic constituents, as well as a breast-fed infant. The absorption and utilization of the proteids was excellent. Of the total energy-value of the modified milk, 89.2 per cent. was utilized by the infant, which, although delicate, got the same proportion of energy from its food as the strong, healthy infant gets from ordinary cow's milk. Moreover, the bodily growth, the taking-on of flesh, and the deposition of mineral salts, followed the same course as in a strong infant fed on cow's milk.

Pyloric Stenosis in Infancy.—This condition, since attention has been called to the clinical features, is no longer a medical curiosity; but the following case is of interest because of its successful termination after surgical interference. An infant of eleven months was apparently well until the sixth month, when it began to vomit after nursing. It also developed an attack of bronchopneumonia followed by empyema, which was aspirated. At the time of admission to the hospital at eleven months, the child was greatly emaciated. A rubber drainage tube was inserted into the empyema sinus and the pulmonary symptoms cleared up. The vomiting persisted in spite of measures of treatment applied. A diagnosis of stenosis of the pylorus was based on the vomiting, dilated stomach, constipation, absence of

bile in the vomited matter and loss of weight. At the operation of the pylorus was found decidedly thickened, but no evidences of inflammation were present. A gastro-enterostomy was done after Kocher's method and a few days after the child was able to retain milk. The stools also became normal, and the patient gained in weight rapidly and remained well. H. L. K. SHAW and A. W. ELTING (*Albany Med. Annals*, January, 1905), who report this case, have collected reports of forty operations upon infants with pyloric stenosis, of which nineteen were gastro-enterostomies, with a mortality of 63 per cent., the remainder pyloroplasties and Loretta's operation. The writers believe that pyloric stenosis in the infant is of much more frequent occurrence than is commonly supposed; that medical treament in these cases has proved uncertain and unsatisfactory; that surgical interference should be practised before the strength and vitality of the patient have become seriously reduced, and that pyloroplasty and anterior gastro-enterostomy are the operations of choice.

Infantile Syphilis.—This term is confessedly much to be preferred to the rather frequently used "inherited" or "congenital' forms of syphilis. GEORGE F. STILL (*Lancet*, November 19, 1904) states that some writers would apply the term "inherited" in such cases only in which the syphilis rates from the time of conception, reserving the term of "congenital" for those in which it was transmitted at some later period of intra-uterine life. Speaking of the transmission of syphilis to the offspring, the writer said that one of the most striking features in the family history of syphilitic children is the frequent absence of any syphilitic history in the mother. This demonstrates the truth of what is embodied in Cole's, that a mother who has shown no symptoms of syphilis may nurse a congenitally syphilitic child without fear of infection. Coutts has suggested that this immunity is derived from the syphilitic fetus, who imparts is own antitoxin to the mother. The order and frequency of the symptoms are considered by the author under the following headings: *Marasmus.*—All in all, this is probably the most noticeable as well as the most frequently observed symptom. In its gravest forms it frequently dates almost from the birth. Snuffles occur almost always within the first three months. The author found it present in 70 per cent. of his cases. The lesion may be very severe, or it may amount simply to an inconsiderable nasal obstruction. The discharge is, however, occasionally blood-stained. On account of the disability in breathing, the child cannot nurse. The depression of the bridge of the nose may be produced very rapidly. *Skin eruptions.*—These generally appear soon after the snuffles, almost always within the first three months. They are very uncommon after six months. The author found a characteristic eruption in 69 per cent. of his cases. Macular patches predominated with erythematous, desquamative, fissural, bullous and condylomatous following in order of frequency. Two very important symptoms are characteristic of inherited syphilis. One is the extraordinary growth of hair which is usually developed at birth, the other being, within a few months, an exactly opposite condition, viz., extreme thinning of the hair. Another very characteristic lesion is onchyia. Enlargement of the spleen,—the statistics on this point are variable, averages having been made as low as 10 per cent. and as high as 58 per cent. Forty-five per cent. of the author's cases showed enlargement. Orchitis is a rare condition, having been present in only five out of 64. Ten per cent. of the author's cases, up to the age of twelve, showed cerebral affection of one kind or another. In considering the contagiousnes of inherited syphilis, the author has said that it was hardly possible to overemphasize the importance of Colles's law. Coutts says, "I have personally never known an instance where syphilis was contracted from an infant with the inherited complaint. L. D. Buckley, however, states that "hundreds and thousands of cases of innocent syphilis have had their origin in innocent babies, and too great care can hardly be exercised." delivery. None of these three children showed evidence of spontaneous improvement, although the eldest was kept under observation several months before operation. Four years ago the eldest child was operated on, and the depression was elevated. It proved extremely elastic, however, and nothing but a fracture of the part in several segments sufficed to overcome the deformity. Although four years have elapsed the region is not yet covered in and still pulsates freely. In the two younger children the method employed was inversion of the depressed area. Circular parallel trephines armed with rim-flange guards were used to cut out discs. These in each case measured 3½ inches in diameter. The steps of the operation are briefly: (1) Exposure of the scalp; (2) removal of the depressed area; (3) inversion of this bone in a sterile towel, and the reduction by thumb pressure of the bend as far as may seem to correspond with the natural curve of the skull; (4) replace it, still inverted, on the dura; (5) close the scalp suture. The author concludes that depressed greenstick fractures do not recover spontaneously. This should not be expected of greenstick parturition fractures any more than of similar fractures elsewhere. This is true of cases over one month of age, and in which Kerr's method has been found inadequate. Inversion is unquestionably the best technic yet offered, and infinitely preferable to elevation.

Lobar Pneumonia in Infancy.—JOHN LOVETT MORSE (*Am. Med.*, January 28, 1905) believes pneumonia is far more common during the first two years of life than is generally supposed. Its course and prognosis differ materially from the descriptions given in many of the older as well as in some of the newer textbooks. The onset is less stormy than is usually described. A chill practically never occurs; convulsions are very unusual. Cough rarely amounts to much in the beginning. High fever usually develops rapidly and is generally accompanied by drowsiness and apathy. The most common period of pyrexia is seven days. A shorter duration is more common in infancy than later. The average duration is longer in the fatal cases. Remissions of even as much as three or five degrees are not uncommon. Crisis is less common than later. Lysis is especially common in cases of long duration. Collapse during the crisis is less frequent than is usually taught. The usual pulse-rate is between 150 and 170, being over 150 in 75 per cent. The usual respiratory rate is between 55 and 80. It is more often above 80 than below 55. The rate of respiration is always increased out of proportion to that of the pulse. This change in the pulse-respiration ratio is most important in diagnosis. Cough is seldom a prominent symptom. Gastro-intestinal symptoms are very common and very important. Marked anorexia is the rule. Vomiting is not very common. Diarrhea is more common than constipation. Distention of the abdomen is frequent, difficult to relieve and often hastens the fatal termination.

The urine often shows the evidences of acute degeneration and occasionally of acute inflammation of the kidneys. The usual mental condition is one of drowsiness or apathy. Cerebral symptoms are usually functional in origin and are frequently associated with a high temperature. The nervous symptoms are often due to a complicating inflammation of the middle ear. The diminution of the respiratory sound on the affected side is often the earliest sign and is of great importance in diagnosis. The order of frequency of involvement of the lobes is left lower, right upper, right lower and left upper. There is no relation between the mortality and the part of the lung involved. The mortality varies directly with the amount of lung involved. Acute inflammation of the middle ear is the most common complication. The pneumonia mortality in The Infants' Hospital series was 25 per cent. This is higher than that in private practice. The younger the infant, the worse the prognosis. The prognosis varies with the amount and not with the part of lung involved. Fever lasting more than nine days is of serious import. The prognosis is good when the temperature is not over 103° F. It is serious when over 106° F. Variations between these two points are unimportant. The prognosis is good when the pulse is not over 140 or the respiration over 55. The amount of the increase above these limits is of little importance. The gastrointestinal are the most dangerous of the more common complications. The treatment is hygienic and supportive rather than medicinal. Far more harm can be done by overmedication than by undermedication. The infant should not be disturbed. It must have the greatest possible amount of fresh, cool air The diet must be regulated to suit the weakened digestion and food forced if necessary. Stimulation should be used when indicated, and not as a routine measure. Strychnine is most useful, alcohol next. The fever should not be treated unless it causes marked nervous symptoms or depression. It should then be treated by cold externally and not by antipyretics internally. Cold must be used cautiously, as infants bear it badly. Fan baths and cold packs are best borne. Local applications should be used only for pain; oxygen for cyanosis. Creosote, the various serums and other "specifics" have no effect on the course of the disease.

NEUROLOGY AND PSYCHIATRY.

Hypochondriasis.—As the result of extended observations, A. SCHOTT (*Berl. klin. Woch.*, December 19, 1904) believes that this condition is not a nosological entity, but rather that it is an indication of degeneration. Hypochondriasis is a very frequent accompaniment of neurasthenia and hysteria, and may appear in all forms of insanity. In dementia præcox, hypochondriacal states demand particularly careful analysis and observation on account of the danger of confusing it with simple neurasthenia or hysteria. In the presence of very marked hypochondriacal conditions, the tendency to suicide or self-destruction must always be reckoned with, and where it becomes an insanity the danger to the patient's surroundings must be taken into account. In every case of hypochondriasis a careful bodily examination is indicated, and all peripheral sources of nerve irritation are to be removed as far as possible. The treatment must be directed to the underlying sources of illness, and the use of drugs should be restricted.

Fecal Vomiting and Reversed Peristalsis in Functional Nervous Disease.—The importance of fecal vomiting as a diagnostic feature of intestinal obstruction is such that the possibility of the occurrence of the symptom in other less grave conditions is overlooked. In the case reported by F. P. WEBER (*Brain*, Summer, 1904) three successive laparotomies had been performed in a patient in whom fecal vomiting and reversed peristalsis were merely hysterical manifestations. This, as well as the study of similar cases in the literature, lead the author to conclude that functional nervous vomiting, like the hemi-anesthesia, palsies and spasms of hysteria, must be regarded as due to an abnormal state of the cerebral cortex, and is just as much a symptom of functional brain disease as the vomiting in cases of cerebral tumor is of organic brain disease. Fecal vomiting of functional nervous origin is merely a rare and extremely exaggerated form of ordinary hysterical vomiting. The vomiting in functional brain disease may sometimes be more violent and severe than it ever is in organic cerebral disease, since fecal vomiting is scarcely known to occur in cases of cerebral tumor. Some light is thrown on this point by the fact that a delusion is apt to be more stable and better "organized" in a monomaniac, whose brain, could it be examined, would probably show no obvious change, than in a general paralytic, whose brain is the site of grave organic disease. For the occurrence of fecal vomiting of functional nervous origin active intestinal antiperistalsis is absolutely necessary. But it is not certain that antiperistalsis necessarily always plays a part in the fecal vomiting known to surgeons as a symptom of organic intestinal obstruction. The fecal vomiting in organic obstruction of the bowels is seldom, if ever, more than "feculent," that is to say, having the odor of feces without containing obvious (visible) fecal particles or masses. Vomiting of formed feces, in the absence of malingering and gastrocolic fistula, practically only occurs in functional nervous cases. This may partly be accounted for by remembering that antiperistalsis, if it occurs at all, is likely to be more forcible when the muscular walls of the gut have not been previously weakened by overdistention or gross organic disease. Hysterical malingering is, of course, apt to develop in the same class of patients in whom fecal vomiting occurs, also the possibility of genuine fecal vomiting occurring side by side with simulation must be borne in mind.

Erotomania.—LEONARD CORNING (*Am. Med.*, January 21, 1905) adverts to the great confusion existing among writers in the use of this term; and more particularly to the frequent confounding of the disorder with nymphomania and satyriasis. Erotomania he finds to be a delirious amorous obsession, pathologic, essentially psychic and devoid of carnal appetite. Erotomania, in the first instance then, is a hypertrophy, so to speak, of the ideal. Later, if thwarted in his pursuits, the erotomaniac may disclose mortification, chagrin, profound depression, even to the point of suicide; or exasperation against the subjects of his obsession or her natural protectors. Under the sway of this emotion he may commit murder. In the interesting and unique case detailed by the author, both the persecutory and depressive stages were successively in evidence. From an exhaustive study of cases coming under his observation, Corning concludes: (1) Erotomania, like other manifestations of paranoia, is due to degeneration. (2) Erotomania may occur in either men or women, but is more common in the former. (3) Broadly, it is an affection of the imagination, a morbid extravagance of the ideal. (4) In its individual manifestations, it presents the characters of a love,

over, of carnal appetite. (5) There is nearly always, though not invariably, a tendency to personification; the subject foists his ideality upon a living person, or upon an inanimate object (statue, picture). In the latter case, his apostrophes and gestures disclose the personifying propensity. (6) The delirious idea of the erotomaniac, like others of the same class traceable to degeneracy, is impulsive, obsessional, irresistibly compelling. Though his intelligence may show him the consequence of yielding to his obsession, he is powerless to resist it. He should, therefore, not be held to a legal responsibility for his acts, but should be restrained, and, if necessary, committed to a hospital for the insane. (7) Erotomania may occasionally coexist with nymphomania or some other form of sexual aberration, or with mysticism. (8) The obsession of the erotomaniac is usually for an individual of the opposite sex. (9) While erotomania may disclose itself in youth, it is really a disease of adult life, coming on after puberty and ending usually in dementia.

Psychiatry in its Relation to Other Sciences.—CHARLES L. DANA (*Am. Med.*, January 21, 1905) shows the relations of psychiatry to its nearest allied sciences,—economics, psychology, physics, neurology, and internal medicine, pathology and physiological chemistry, criminology, forensic or legal medicine, and anthropology. He indicates the lines along which work can be carried with mutual help to all, and especially to the advancement of a sounder knowledge of that capstone of all medical sciences, the pathology of the mind.

Gluttony as a Cause of Symptomatic Epileptic Convulsions.—W. P. SPRATLING (*Med. Rec.*, January 28, 1905) describes a type of epilepsy due to errors of diet which is fairly common and is generally amenable to treatment. The patients are usually middle-aged men of plethoric physique, leading inactive lives, and eating and drinking to excess. The primary cause of the convulsive attacks in these cases seems to lie, first in a weak stomach and second in some obscure disorder of metabolism. The type of convulsion induced is usually of the grand mal variety, though petit mal seizures are also observed. The treatment is that of the toxic state induced by the faulty metabolism, and is mainly dietetic and hygienic.

THERAPEUTICS.

X-ray Treatment of Urethral Caruncle.—The X-ray is now so well established as a remedial measure that one is hardly surprised to hear that it has been successfully used in some hitherto refractory conditions. G. H. STOVER (*Den. Med. Times*, October, 1904) reports two cases of urethral caruncle successfully removed by means of the X-ray, which he considers the first cases to have been recorded. The first case had appeared originally fifteen years ago and had recurred after two operations. Twenty-five X-ray treatments were given, using a tube of medium low vacuum, at a distance of five inches, the seances lasting ten minutes. The size of the growth diminished after the fourth or fifth exposure, and the pain became gradually less. In the second case the growth had been removed some six years before but had returned. Six exposures were given with a low tube at a distance of six inches, with ten-minute seances during a period of about three weeks. After the fourth exposure the patient stated that she had no more pain or soreness.

Large Fibro-Sarcoma Treated by Roentgen Radiation.—Many medical practitioners are skeptical as to the utility of the Roentgen rays in deep-seated malignant conditions and as a matter of fact the failures are more numerous than the successes. Occasionally, however, clinical manifestations are observed, of a nature to draw attention to the curative power of this agent. CLARENCE E. SKINNER (*Arch. of Elec. and Rad.*, October, 1904) reports a case of inoperable spindle-celled sarcoma, ten by five by eight inches in dimensions, producing lethal symptoms in the patient, and which had resisted all measures applied for its relief, which was entirely removed and the patient restored to unimpaired usefulness and health, by 136 applications of the X-ray of high penetration from a tube excited by a static machine, the treatment having extended over a period of 849 days, being an average of one application every 6.2 days. The case demonstrates that sometimes the rays effect a complete cure; that the lack of satisfactory results in many cases is probably not due to mere size in the tumor or thickness of intervening tissue, but to some undetermined factors which it is not unlikely we shall know more of later; that there is in all probability some connection between systemic toxemia and reduction of the growth, as in this case there were periodic recurrences of toxemia with invariable shrinkings in the size of the tumor; and that in inoperable cases the Roentgen-ray treatment should be persisted in as long as possible, even when there is no observable result.

Inoperable and Recurrent Sarcoma Successfully Treated by Roentgen Ray.—It is now widely held that the greatest value of the Roentgen radiation in connection with malignant growths is in postoperative cases to lessen the danger of the recurrence, and in inoperable cases to diminish suffering and perhaps prolong life. The number of complete cures in the latter type of cases is necessarily small, and the three cases reported by GEO. C. JOHNSTON (*Jour. of Adv. Therap.*, November, 1904) are of interest. *Case I* was in a man fifty-six years of age, suffering from a growth, the nature of which the author does not state which involved the abdominal muscles, the peritoneum and the omentum. Much of the growth and incidentally the abdominal wall were removed, still leaving a considerable portion of the tumor. Treatment was given daily for two months, bi-weekly for three months and once or twice each week for another month. The pain had disappeared, the abdominal wall softened and the patient had gained thirty pounds. Examination fails to reveal any evidence of the existence of tumor. *Case II*, a recurrent sarcoma of the vulva in an unmarried woman of forty-two years, had been apparently removed in its entirety by operation, but recurred in the scar at the end of six months, when it was again removed. At the end of several months the growth again recurred, this time involving the skin, subcutaneous tissues and the periohsteum. Ten-minute treatments were given daily for three weeks. The pain had disappeared and a recess of ten days was given the patient. Treatment was resumed with the same technic every other day for the next six weeks. Treatments were then given with a high tube twice each week for two months. Six treatments were then given with a softer tube, resulting in a dermatitis necessitating a discontinuance of the treatment. Upon recovering from the dermatitis, it was found that the last trace of the sarcomatous deposit had disappeared. *Case III* presented involvement of the entire upper chest, the suprasternal notch and the left triangle of the neck. There had been three operations. The treatment was given every day for three weeks with a low tube. The author does not mention the duration of the balance of the treatment, but states that though two years have elapsed, the patient

is apparently well. There were no evidences of toxemia in any of those cases and when any of them was burned, the reaction was prompt. The author concludes from these cases that we are justified in believing that in this agent, when promptly and intelligently applied, the profession has a curative that is entitled to the respectful attention of the medical world, and that its indications should be carefully studied.

Hodgkin's Disease.—Although the prognosis in Hodgkin's disease has been generally considered practically hopeless, the undoubted benefit derived in some cases from applications to the X-ray justifies us in hoping that we have, if not a permanent, at least a temporary relief at our disposal in this obscure and severe condition. JOHN V. SHOEMAKER (*N. Y. Med. Jour. and Phila. Med. Jour.*, November 12, 1904) reports a case in a physician, fifty-two years of age, who was treated while in the last stages of the disease by the X-rays. The patient died, but the changes in his condition were remarkable and worthy of record. Daily exposures were given for ten minutes during sixteen days. The entire body was exposed to a high vacuum tube placed alternately over the abdomen, left side and back. The size of the glands began to diminish by the end of the first week and were one-third the original size at the end of sixteen days. The spleen decreased gradually. These results obtained in sixteen days in a moribund patient warrant our hoping for some success in the early stages of the disease. The dangers to be confronted are: That there may not be time to produce an effect; that the rapid disintegration of the morbid tissues may cause toxemia; and burn.

Surgical Use of the X-ray.—The liability of making a false diagnosis by too hasty interpretation of X-ray results, and the dangerous possibilities lurking therein, is cause for unending vigilance on the part of the skiagrapher. A. L. GRAY (*Mobile Med. and Surg. Jour.*, November 4, 1904) reports a case in point. The patient, a small child, had swallowed a safety pin, which, resisting all efforts at removal, remained lodged in the alimentary tract, and gave rise to severe pain and an enterocolitis. The child was examined with the fluoroscope because of objections to anesthetics on the part of the parents. A small mass which might have been the head of the pin was located in the hepatic flexure of the colon. Operation was deferred on account of the position of the obstacle which apparently rendered natural passage possible. After several days, the child growing steadily worse, another examination by fluoroscope was made and a similar spot located in the hypogastric region, the original spot having disappeared. The child was then anesthetized and a radiograph made, which plainly showed the pin in the esophagus. The stomach being opened, a probe was passed through the mouth and the pin pushed downward and removed. It was subsequently ascertained that the child had been given large doses of subnitrate of bismuth for the bowel trouble, and it is presumed that the latter was responsible for the errors in the fluoroscopic examinations.

Movements Produced in the Stomach and Bowels by Electricity.—G. G. MARSHALL (*Med. Rec.*, January 7, 1905) conducted a series of experiments on animals in order to determine the degree of reaction caused by the application of the electric current to the stomach and intestines. The faradic, galvanic, and faradogalvanic currents were used in different degrees of intensity, and the method of applying the electrodes was also varied in many ways. While the pyloric end of the stomach feebly contracted, and the intestines contracted uniformly under the immediate application of a small metal electrode, no reaction followed when a thin layer of wet cotton was placed over the metal. The contraction produced in the intestine had no semblance to peristaltic movements, only the circular fibers being constricted. Hence the conclusion is drawn that electricity as generally administered, either percutaneously or directly, never causes contractions or increased peristalsis of these viscera, and the author shows how contractions of the thoracic muscles may simulate a gastric reaction, and so deceive physician and patient. Experiments are also described which demonstrate that the gastric mucosa offers no unusual resistance to the passage of electric currents, and that the failure to produce contractions in the organ is in no way due to a non-conductive character of its mucous membrane.

Roentgen Rays in Cancer.—Since 1896, when Despeigne first utilized the X-rays in a case of cancer of the stomach without any results, this therapeutic agent has been used the world over with varying success. DIEMIL PASHA (*Revue de Chirurgie*, January, 1905) states that within the last six months Dumur and Lamoine have published the histories of a number of cases cured by this means. One of these was cited as a case of cancerous stomach cured by radiotherapy. Side by side with these favorable reports, the same authors have published a long series of distressing failures as well as some more encouraging, in which there was a cessation of the functional disturbances without permanent cure. The author recites the history of the treatment in seven subjects. In the case of the three which he reports as cured, the cancers were superficial and primary. Three were ameliorated and one was treated without success. The author admits that we know comparatively nothing of the action of the rays on cancer whether it has to do, as Perthe has contended, by retarding epithelial growth, or whether the process consists in an electro-chemical inflammation of specific local origin as Jacinski has suggested—nobody knows. The author tends to the conclusion that the action is probably an antiparasitic one. He further concludes that radiotherapy may have a very favorable action on malignant tumors in general; that it yields absolute cures in cases where the lesion is superficial, primary and only slightly advanced; that it is a most excellent palliative treatment for deep-seated, advanced growths and exercises an influence upon cachexia.

PRESCRIPTION HINTS.

Chronic Bronchitis.—The following combination is recommended by E. Fletcher Ingals to relieve the cough in chronic bronchitis when opiates are not contra-indicated:

℞ Morph. sulph. ..... gr. 1
Ammon. carb. ..... gr. 30-40
Syr. pruni virg. } aa. oz. 4
Mist. glycerrhizae comp. }

M. Sig. One teaspoonful in water to relieve the cough;

or,

℞ Terpin hydratis ..... gr. 2
Ext. cannabis ind. ..... gr. 1-20
Codeinæ ..... gr. ½
Ol. menth. pip. ..... gtt. ½
Sacchari albi ..... gr. 3

M. Ft. capsulæ No. 1. Sig. One every four hours until the cough is relieved.

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THE DRYNESS OF INDOOR AIR.

THE supply of fresh air, that is of oxygen-laden air, has for many years now received from physiologists, physicians, and nurses as well as from the more knowing of the public, no little attention,—not nearly enough, to be sure, but still an encouraging degree of effective notice. Even architects and builders have given a half-hearted sort of attention to ventilation, so that nowadays in some of the finest and most carefully built buildings it is possible often to find the carbon-dioxide percentage almost down to the hygienic maximum of six-hundredths. The anti-tuberculosis crusade is helping this matter greatly, and it is likely that the Americans now being born will look back with something of the same sort of horror on our present closed windows and "bundling up" as that we now feel toward surgery before the days of anesthetics or toward city milk-service of a quarter century ago. Oxygen, purveyor of long life, the world is learning at last to appreciate, and the mean life-span lengthens correspondingly.

But there is another aspect of the atmosphere we breathe which gets relatively no fraction of the attention that it deserves to receive. Nearly everybody ignores the highly important demand on the part of the respiratory passages and of the skin in general for moisture in the air about us in our offices, factories, shops and dwellings. When the atmosphere out of doors is very dry or very humid most persons realize it, and incontinently curse the "weather man," but they nearly all quite neglect to maledict the much more responsible authors of the harmful dryness of the air they live in inside of buildings. But slow always is the advancement of learning among the mass of men,—and truly testudinal where ancient habit and factors of trouble and of some expense of money hold it back, and with it the promised benefit.

In buildings heated by direct radiation and without forced drafts of air immediately from outdoors, tests with the wet-bulb thermometer often show a relative humidity of from twenty to thirty per cent., while the average in the open air of temperate climates is approximately seventy per cent. In dwellings heated by tight stoves this percentage of twenty or thirty is much reduced, often to the degree that the air feels "burned" even to the average individual. Apartments heated by indirect radiation or by furnaces usually show more moisture in their air because of the strong draft required from out-of-doors and usually from near the ground. Even in buildings provided with elaborate ventilating arrangements, the air's humidity is seldom adequate, for it unfortunately must be admitted that the very large majority of ventilating systems, which do not include power for forcing currents of air in and out, are failures, and plants with such power, steam or electric, are of course still relatively few. This failure of most air-supplying systems is at once obvious to any one who has made numerous tests of the proportion of carbon dioxide in the air of public and private buildings. The reason lies largely in the expense but in part surely too in the purely perfunctory way in which most architects plan the air-supply of their structures. But even were the allowance of air in the average building adequate, this would only in small part supply the needful moisture in the winter-time indoors.

Now this almost universal deficiency of watery vapor, suffered month after month and year after year, is a more serious matter for its victims, (and they are millions), than even most of us realize. The throat specialists can tell one how great the injury, so widespread, is, and they are unanimous with the hygienists and physiologists in preaching improvement. Many persons do not appreciate how large a surface of mucous

membrane is exposed to the inflowing tidal air between the nostrils and the alveoli. Abnormally dry air passing so frequently over this large area of sensitive membrane dries it and soon begins to irritate it. The result in a few months is nasal catarrh, a "hacking" perpetual pharyngitis, and various affections of the mouth, the Eustachian tubes, the pharynx, larynx, trachea and bronchi. Defect in the vigor of these exposed membranes makes various infections more easy by lessening the membrane's power of resistance and thereby the way is open to secondary evils worse than the unpleasant and harmful primary inflammation. But again moist air feels warmer than does dry air of a similar temperature. A room at 65° F., if the air be properly moist, seems warmer and far more comfortable than a dry room at 72° or 74° F. Here is a saving in heat, which means not only a saving of money, but also the prevention of no small amount of harm and trouble to the organism.

In a large telephone building in an eastern city, the numerous young women were formerly much troubled and incapacitated from work by the dryness of the air they breathed. An apparatus was recently put in which evaporates daily sixty-six gallons of water and distributes it about the building. The effect was immediately apparent in the decrease of illness among the employees, not to mention their increased comfort. The watery vapor required in a room is greater in amount than might be expected in advance. A pan of water on a radiator or on a stove, unless actually boiling continually, is of no account in supplying the moisture deficiency even in a single room. The large pan constructed in most furnaces must be kept supplied with water to be of any service whatever! Steam escaping from a radiator-vent is adequate for that room, but impracticable owing to the noise.

The problem then is a hard one with our present habits of heating the rooms in which we pass our days. One solution, for certain times and places, lies in open windows and in ventilating systems which really supply fresh air in amount to satisfy the ever-hungry blood. Another solution is in makeshifts to keep the air moist by hook or by crook. The best, real solution, for promulgation among men at large, and for adoption as fast as the pressing need becomes known among us, is the construction, with the houses of various sorts, of some sort of air-moistening device. Meanwhile it behooves medical men to keep in mind this crying need of our modern civilization, so unphysiologic in so many different ways. Of all these this need of moisture in the air we breathe is by no means least.

NEUROFIBRILS AND THEIR FUNCTION.

No better illustration of the advancement of biological learning is at hand than the histology of the nervous system in the last ten years affords. To-day the unprophetic physiologist knows not what to suppose and can "only stand and wait," hopeful that ere long the secret of the nerves will be revealed.

In the neurone theory the physiologist, as well as the histological embryologist, had something definite, and though puzzled by the uniqueness of its supposed mode of action, he hailed it as an added hope in the solution of the great neural mystery. What a storm, then, a priori, met the drawings and descriptions of Apáthy and of Bethe, showing fibrillar continuity between the neurones! And this despite the fact that men as trustworthy as Dogiel, Schultz, Lugaro, Golgi, Nissl and Mann more or less promptly corroborated the findings of the discoverers. Nissl's conversion to the belief is especially significant because there is little doubt that study of his chromatophile bodies retarded somewhat the general seeing of the intracellular fibrils and their continuity with those of the neuraxes and dendrites.

At the present time the majority of workers familiar with the new staining methods and with the research reports of the last two years, are nearly ready to accept many things opposite in tenor from the demands of the neurone theory, especially such (though these are yet but few) as have seen the books of Bethe and of Nissl. Looked at broadly, the present views are but the settling back of the pendulum set moving at least ten years ago by the observations which led up to the neurone theory, so named by Waldeyer, and whose climax was found in the comprehensive book of Barker. From the old-fashioned notion of nerve-cell and fibers the trend distinctly now is round toward the same point of view again, save that a wealth of detail has been added to both cell and fiber, and that the trophic function of the cell has meanwhile been exalted—possibly too far.

Were we to roughly describe a plate at the end of Nissl's book (which he expressly declares is nothing more than a suggestion, "not even an hypothesis"), showing perhaps how neural things tend, we should quickly see the nature of

the anti-neuronal drift. Imagine, then, that the gray matter of the nervous system (save the "gray" fibers, which are ill-called so because they appear darker than the highly refractive medullated fibers with their covering of fatty myelin), that the gray matter is pervaded everywhere with the finest of fine networks, the diameters of whose threads and of whose meshes are both exceeding small. This is the "neural gray." Here and there this reticulum gives off a most delicate fiber and several of these threads combine to form one of the "primitive" fibrillæ which in turn combine in hundreds to form a nerve fiber (the neuraxis of a neuron, the axis cylinder of the nerves). Around the nerve fibrils is a closely fitting reticulum known already as Golgi's net, and where this fibril ends in the gray matter it comes into connection with the neural gray network, than which it is coarser and much more conspicuous, especially to Golgi. By threads as yet unseen this Golgi's net connects everywhere with the ends of the fibrils, which in turn combine into fibers. Between these fibrils and the ultimate meshes of the neural gray there are then two modes of connection,—one by the mediation of still smaller direct fibrillilæ (if we may make the word) and the other by means of the widespread connections of Golgi's net surrounding the ends of the fibrils.

But around the nerve-cells, too, extends everywhere both Golgi's net and, outside that, the "neural gray." Through the cell extend numberless fibrillæ, some of which go far in the projections of the cell, but many of which also, by the mediation of Golgi's net, are in direct connection with the universal basal reticulum of the neural protoplasm, which this "neural gray" essentially is. Thus the conducting paths of the nerves, the fibrils of the fibers, are in constant and intimate connection with the very substance of the gray matter's protoplasm and conduct its impulses and those from active tissue protoplasm, doubtless, of other sorts.

Functionally this suggestion if proven substantially true would mean much. That it will be so proven no one at the present time would dare to prophesy, but should it be, we should have at length an hypothesis adequate to account for phenomena under the neurone theory blind and with only a semblance of satisfaction in their explanation. Thus in the first place observe that the gross fiber of the nerves is wholly inadequate to convey the messages which seemingly should pass through it, say from the end-organs of a portion of an eye-muscle, if the fiber conducts as an unit a single message. Still more striking may be the deficiency in the organ of Corti of the ear. This consideration makes it in general probable that the fibril rather than the fiber is the neural path. Again, nothing which adequately represents any connection between these fibrils and the essential parts of the nerve cell, namely, the nucleus, and Nissl's bodies, has ever been pointed out. On the other hand, the neural gray and Golgi's net do suggest the possibility of a means of connecting the nervous impulse in the fibril with a sufficient source of metabolic energy. In this suggestion, if nowhere else, the nerve fibril runs continuously into the very heart and being of neural protoplasm where it could receive all that the vastly complex katabolism of lecithin and "phosphines" and nucleoproteids could give it. As for the use of the nerve cells, it is not too hard to conceive that they might modify by their metabolism, perhaps anabolic, the messages as they pass, and support the nutrition of the fibrils or of the neuroplasm around them. The pigment granules found in many nerve cells indicate the presence of most delicate metabolism of some sort.

But idle, nearly, are the wanderings of the imagination when let loose from the editorial fibrils—that is to say, neurones—into the realms of the details of the nervous system, ænigma magna of the day.

ABDOMINAL PREGNANCY IN ANIMALS AND WOMEN.

IN the *Archiv für Geburtshülfe und Gynäkologie*, 1896, Band LII, S. 376, Leopold published the history of a remarkable case. A woman four months pregnant fell down stairs and injured herself in the abdomen. At the termination of the period of gestation an examination led to the diagnosis of extra-uterine pregnancy. The abdomen was opened and a fetus of about the fourth month of gestation enveloped in a thin sac was found to occupy the abdomen. The umbilical cord passed through an opening in the posterior wall of the uterus. This organ, in which was also located the placenta, was removed. The evident conclusion from these pathological data is that the uterus was injured when the woman fell and the fetus in its amnion was intruded into the abdomen through a rent in the posterior uterine wall. This condition has been termed "utero-abdominal" pregnancy.

In the *Lancet*, December 10, 1904, John Bland-

Sutton states that the chief interest of Leopold's case lies in the fact that, although this form of pregnancy is extremely rare in women, it is the commonest form of extra-uterine pregnancy in mammals with long two-horned uteri. The author is satisfied that tubal pregnancy in these mammals is exceedingly rare, he having failed to discover a single convincing record or specimen. There are, however, undoubtedly many cases correctly recorded of puppies and kittens enclosed in tightly fitting sacs which have been found adherent to the omentum and the intestines. Some observers have been led to the conclusion that these abnormalities represent examples of primary abdominal pregnancy.

That this is a purely unverified speculation continues to be Sutton's opinion. Thirteen years ago he advanced the belief that in mammals possessing bicornate uteri, the horns of which are of some length and frequently containing several fetuses, the uterus not uncommonly ruptures, because of its violent efforts to expel a contents which has grown proportionately too large for the maternal parts. In the vast majority of cases this accident is fatal to the mother. Occasionally, however, she survives and the extruded fetuses become adherent to the omentum, the uterine rent cicatrizes, the amniotic fluid is absorbed, the placenta disappears; the amnion shrinks and compresses the fetus tightly. Occasionally these sacs remain free in the abdominal cavity.

The phenomenon of so-called ".abdominal pregnancy" in mammals has recently been stimulated by the observations of Pembrey and Kamann. These observers have experimented with rabbits. A doe was killed within a week of the last littering. On opening the abdomen five white discoidal bodies were found. They showed no attachment to the abdominal organs, and in all but the smallest the head, body and limbs of a fetus could be felt. Pembrey found a scar on the front of the uterus just below the junction of the cornua. A further description of his findings is to be had in the Transactions of the Obstetrical Society of London, Vol. XLVI, p. 283, 1904.

Kamann (*Monatsschrift für Geburtshülfe und Gynäkologie*, 1903, Band XVII, p. 588, Berlin) from a study of similar conditions concludes that in the case under his observation the embryos were discharged into the abdomen after primary rupture of the uterus.

In his book on the Surgical Diseases of the Ovaries and Fallopian Tubes, second edition, 1896, Sutton refers to the literature of the reported cases in which the cornu has undergone axial rotation. This is not uncommon in the mammals under consideration, namely, those having two-horned uteri. Pozzi, Martin and others have recorded cases of axial rotation in gravid Fallopian tubes in women.

In women utero-abdominal pregnancy is rare, for the simple reason that rupture of the uterus almost invariably is followed by death, but the case of Leopold furnishes conclusive proof that, occasionally at least, the human being may survive it. It is instructive to note that these conclusions are given added weight from comparative observations in animals by Sutton. Primary abdominal pregnancy is probably a myth of the past.

ECHOES AND NEWS.

NEW YORK.

Medical Library and Historical Journal.—Owing to the almost total destruction by fire of the establishment of its printers on February 13, it begs the kind indulgence of its subscribers and advertisers for delayed publication of the January, 1905, number. Fortunately, duplicate copies of all important MSS. were made before sending them to the printer, so the heavy loss incurred by the *Journal* will not be shared by its contributors or readers. The Editor desires to announce that immediate steps have been taken for the making of new plates and duplicating the entire number, which was in press, and that this issue will be published at the earliest possible date.

Denuding the Forests of the Empire State.—The destruction of the forests of the State of New York seems to be going on, but few people know how rapidly this work is progressing. Some computations on this subject, have recenly been made and the figures are startling in the extreme. For instance, it is estimated by men who have looked carefully into the matter, and have taken actual results for a considerable period of time as the basis for their calculations, and it is stated as a positive fact that it takes thirty-five acres of pulp wood land per day to furnish the paper stock for the Hearst papers alone, in New York, Boston and Chicago. Here is the basis for the statement: Newspaper is made of 20 per cent. of sulphite pulp and 80 per cent. of ground wood pulp. One cord of wood produces 1,200 pounds of sulphite pulp. One cord of wood produces 1,800 pounds of ground wood pulp. The average lumber land in certain sections of the State produces ten cords of pulp wood per acre. Therefore, the ten cords produced for newspaper use, 16,800 pounds of stock, and the 300 tons divided by this equals thirty-five acres per day. Think of it, thirty-five acres of land being denuded for the pulp to furnish one newspaper in New York, Boston and Chicago, for one day. But the effect on the State water supply is something that cannot yet be estimated. A few centuries of this and the Adirondacks will be as barren as the Desert of Sahara.

Manhattan Maternity.—The Manhattan Maternity Hospital and Dispensary, at 327 East Sixtieth Street, was opened last week. The new institution is a model of its kind, containing every known improvement for the field it is to fill. It will include a training school for nurses and eight student-physicians can be accommodated in the building. There will be a large outdoor department, connected with the dispensary, which will cover practically the whole of the upper east side. The building has been put up and partially endowed by Henry A. C. Taylor. On the Board of Directors are Moses Taylor, President; Frank L. Polk, Secretary and Treasurer; Daniel Lamont, Percy R. Pyne, William Sloan, H. R. Taylor, H. S. Thompson, and Cornelius Vanderbilt. The building is square, of five stories and basement, and built of brick with a white enamel finish that it may be kept perfectly clean. On the main floor are the dispensary, the examining and admitting rooms, an office and Superintendent's reception room, with the students' dormitory and dining room. On the floor above are the wards, accommodating eighteen patients, and the nurseries for both the ward and private patient babies. There are tiny single cribs in the latter, and in the former little three-baby cribs with a couple of single ones for isolating the children when that is necessary. The ward patients' dining-room is also on this floor. All the rooms are bright and light, there being windows on all sides of the building. On the third are the private rooms. On the fourth floor at one side is the operating room and amphitheatre, with seats extending up into the top story.

Two Dangerous Bills.—To the Doctors of New York State: There are two bills now before the legislature of this State which we believe the medical profession should express itself as uncompromisingly opposed to. They are Senate Bill No. 261, introduced by Senator Fitzgerald, of New York City, entitled An Act to regulate the practice of Kinesipathy in the State of New York, and Senate Bill No. 298, introduced by Senator Davis, of Buffalo. Senate Bill No. 261 is somewhat vague in its provisions, but aims to include under the term "Kinesipathists" all massage operators. It might be made to serve a good purpose, possibly, if a clause was inserted providing that "in no case shall the practise of Kinesipathy be employed for the treatment of any disease or injury of the human body except under the advice and guidance of a licensed practitioner of medicine." If this is not inserted the bill might be construed as giving masseurs the right to treat diseases and injuries of the human body by means of the method known as Kinesipathy, in which case the bill would be worse than the Osteopathic Bill. The second bill, Senate Bill No. 298, entitled An Act regulating the practice of Osteopathy in the State of New York, provides for the creation of a Board of Examiners in Osteopathy, to appear before which one has to show evidence of attendance for three years at a regularly conducted school of "Osteopathy." Where such schools are located or what constitutes a regularly conducted school of "Osteopathy" I do not know. The secret of the bill is contained in a clause which provides that the Regents may accept, as the equivalent of this course of study, five or more years of practice. Section 11 of the bill provides that "Osteopathists" when duly licensed and registered in accordance with this act shall have all the rights and privileges and be subject to the rules and regulations that govern other physicians or medical practitioners in matters pertaining to public health, but they shall not be authorized to prescribe drugs or to perform surgery." From this it will be seen that the enactment of this law will give to every person who has been practising the system known as "Osteopathy" for five years the right to register and obtain all the rights and privileges now possessed by physicians who have studied medicine for four years and who have complied with all the conditions of our medical laws, except that they cannot prescribe drugs. The fact that there is a law now on the Statute Book regulating the practice of the healing art and that these people who call themselves "Osteopathists" have been practising that art without complying with the law, is evidence enough, at least so it would seem, that they are lawbreakers; and yet, notwithstanding this, they have the assurance to go to the legislature and ask that special legislation be enacted for their protection. They cannot even plead that "Osteopathy" is prohibited in this State, for there are no restrictions placed on the person who qualifies under our present medical law. The regularly licensed physician can practise what is called 'Osteopathy" or any other peculiar system of healing, and doubtless does when there seems to be any particular reason for so doing. The fact is that "Osteopathy," as a distinct and separate method of treating disease, is not only a humbug and a fraud, but is positively dangerous in the hand of any but educated physicians. Will not the doctors of New York interest themselves in this matter and write their representative in the legislature exposing this fraud? Try and get the doctors in your county to do the same. When possible have your medical societies pass resolutions opposing the bill. The matter is now in the hands of the Senate Judiciary Committee, of which Hon. Edgar T. Brackett is Chairman. A list of members of the Senate Judiciary Committee is here added. Please send in protests at once. There will be a hearing on the Osteopathic Bill before the Senate Judiciary Committee Wednesday, March 1, at two o'clock P.M., in the Judiciary Room in the Capitol Building, at Albany. Will you try to attend personally and if possible have a delegation from your County appear in opposition to the bill?

The Osteopathic Bill has since been introduced in the Assembly and referred to the Committee on Public Health. The hearing on March 1 will be a joint one before the Senate Judiciary and the Assembly Public Health. Below are the names of members of these two committees. If any of them are from your County please get all the doctors in their districts to write them to vote against the bill. *Assembly Committee on Public Health:* Hon. James C. Sheldon, *Chairman,* Cattaraugus; George H. Whitney, Saratoga; James K. Apgar, Westchester; Richard C. Perry, Kings; Frank L. Stevens, Rensselaer; Ezra P. Prentice, New York; Matthew Hurd, Rockland, Leonidas D. West, Yates; Edward Rosenstein, New York; John Wolf, Kings, John W. Gurnett, Schuyler.

Senate Judiciary Committee: Hon. Edgar T. Brackett, *Chairman,* Saratoga; George A. Davis, Erie; Nathaniel A. Elsberg, New York; William W. Armstrong, Monroe; Jotham P. Allds, Chenango; Spencer K. Warnick, Montgomery; Merton E. Lewis, Monroe; George H. Cobb, Jefferson; Alferd R. Page, New York; John Raines, Ontario; Patrick H. McCarren, Kings; Jacob Marks and Thomas F. Grady, New York.

FRANK VAN FLEET, M.D.,
Chairman of the Committee on Legislation.

PHILADELPHIA.

Appointed.—Dr. E. Harris Scatchard, of Germantown, has been elected superintendent of St. Luke's Homeopathic Hospital to succeed Dr. Carl Vischer, who has resigned because of the increased demand of his private practice.

Resigned.—Owing to the fact that he has accepted the position of assistant professor of surgery at the Jefferson Medical College, Dr. John H. Gibbon has resigned from the Medical Board of Examiners of the Civil Service Bureau.

Prize Award.—The essay on "The Biology of the Micro-organisms of Actinomycosis," written by Dr. James Homer Wright, of Boston, Mass., captured the Samuel D. Gross prize for the Academy of Surgery, for the year 1905.

Bequests.—The will of Isaac Rosskam bequeathed $18,500 to charitable institutions, of which $5,000 was given to the Jewish Hospital Association to maintain a Rosskam bed, $2,000 to the National Jewish Hospital for Consumptives, Denver, Col., and $1,000 to the Free Hospital for Poor Consumptives, White Haven, Pa.

Association of Infectious Diseases.—Dr. Edward Martin placed the authorities of the Municipal Hospital in a peculiar position by sending them a patient who was suffering with diphtheria, measles, chickenpox and scarlet fever. After some consideration the child was given a special ward with two nurses to take care of her.

Pneumonia Causing Alarm.—Of the 104 patients in the Germantown Hospital last week 21 were cases of pneumonia; of the 77 patients in the Samaritan Hospital 12 were afflicted with this malady; in the German Hospital six of the 85 medical cases were suffering with this disease; in the Hahnemann Hospital two thirds of the medical cases this winter have been pneumonia. Of the 509 deaths last week 102 were due to pneumonia.

The Associated Health Authorities and Sanitarians of Pennsylvania.—The twelfth annual convention of this body assembled at Harrisburg, February 13 and 14, 1905, and there unanimously indorsed the following bills now before the State legislature pending action: (1) The Establishment of a Bureau for the Registration of Vital Statistics. (2) The protection of the Inland Water Supplies of the State. (3) The Establishment of a State Department of Health. Dr. John S. Fulton, Secretary of the State Board of Health of Maryland, who delivered the annual address, stated that in many respects Pennsylvania in greatness was second in the list, but in a matter of vital statistics comes next to Oklahoma. In opening the symposium on Tuberculosis by the members of the medical staff of the Phipps Institute, of Philadelphia, Dr. Charles J. Hatfield, who spoke on "The Modes of Infection," maintained that there is little danger of infection through the ingestion of meat, but that sanitary inspection of milk, the sources from which it is derived, and the handlers of the product is of the greatest importance. He regards the dust from houses in which tuberculous patients are kept as extremely dangerous while the street dust he does not fear. Dr. Wm. B. Stanton read a paper on "The Importance of Popular Education in Regard to Tuberculosis." Although, he said, isolation of all cases is impossible and segregation impracticable, the consumptive can be taught to take care of his sputum and the healthy man his body; if those measures are adopted, prevention will be greatly enhanced. In his paper on "The Necessity for Early Diagnosis in Tuberculosis," Dr. Joseph Walsh maintained there were two reasons for doing so: (*a*) It will give the patient the best possible chance for life. (*b*) It will prevent the patient from infecting other people. In discussing the free antitoxin question at the close of the session, Dr. A. H. Stewart, of the Philadelphia Board of Health, said the time had come when the State of Pennsylvania should furnish antitoxin free to rich and poor alike in all cases of diphtheria. Dr. Hugh Hamilton, of Philadelphia, in speaking of pollution of the water supply, maintained that the complexities and intricacies of the pure water supply in this State were made more complicated by the reckless artificial pollution of the streams through several industries. Dr. A. H. Stewart, in discussing the "Disinfection for Communicable Diseases," stated that he found the best way to kill germs in an infected room was to apply the solution containing the gas directly to every portion of the room, walls and floors. The following officers were elected: President *ex officio*, Gov. Pennypacker; First Vice-President, Dr. T. M. McKee, of Kittanning; Second Vice-President, Dr. R. S. Maison, of Chester; Treasurer, Dr. Jesse Green, of West Chester; Secretary, Dr. W. R. Batt, of Philadelphia.

Section on General Medicine of the College of Physicians.—This meeting was held February 13, 1905. Dr. O. J. Kelly showed a patient who had recovered from "Pyopneumothorax after Evacuation through a Bronchus, Subsequent Resection of a Rib." When he saw the patient there were feeble signs of pleural effusion; about fourteen days later the patient expectorated pus, after which time the displacement of the organs was less marked; a little later, however, the symytoms of pyopneumothorax were distinct. At operation 30 ounces of pus were found. Dr. Eshner showed a case of aortic regurgitation. The murmur could be heard when the ear was placed from 2.5 to 4 cm. from the chest wall. Dr. Eshner then read a paper entitled "Universal Congenital Atrichia." The patient tells him that hair have never been present at any point upon his body. Eshner found atrophic changes in the nails and teeth. The patient scarcely ever perspires; he has retinitis albicans. Drs. Sailer, Geisler and Welty then read a paper entitled "Polycythemia and Chronic Cyanosis, with a Report of Three Cases." Upon their first cases they performed an autopsy but found no communications between the various cavities of the heart; the ductus arteriosus was not patulous. The red blood cells were and remained about 8,000,000 until the patient developed a lumbar abscess, when they fell. The hemoglobin could not be estimated. The second case had 8,000,000 red blood cells and hemoglobin 110 per cent. In their differential counts they found an occasional myelocyte, few normoblasts and basophiles and few basophilic red blood cells. The third case had as high as 9,240,000 red blood cells, and 120 per cent. hemoglobin. They studied a number of cases of advanced emphysema, but in none could an increase in the erythrocytes be determined nor were any of them cyanotic. Dr. Robinson showed a case of polycythemia. Dr. Sailer, in the discussion of his paper, noted Ehrlich pointed out that an iron-free diet brought about an improvement in the condition of the patient. Dr. J. Norman Henry read a paper entitled "Paratyphoid Fever with a Report of Six Cases." He maintains that there are two forms of the paratyphoid bacillus, one known as the para-

typhoid A and the other as B. They can be differentiated from the colon bacillus by the fact that the paratyphoids do not ferment saccharose and do not coagulate milk. They are found in the blood, urine and rose spots. He stated that the symptoms are identical with those of typhoid except the Widal reaction is negative when *Bacillus typhosus* is used to carry out the test, but there is clumping and cessation of motility when the paratyphoid bacillus is employed. Then, too, the duration of the disease is shorter than in typhoid fever and the paratyphoid may end by crisis. This disease may be complicated with typhoid fever. At post mortem he did not find involvement of the Pyer's patches nor the solitary follicles.

CHICAGO.

Open Willard Hospital.—The Frances E. Willard National Temperance Hospital was recently dedicated to the memory of the temperance worker. The hospital will accommodate seventy patients. It is the only institution of its kind in the country that eliminates alcohol in the treatment of patients.

New Hospital Law.—An ordinance to compel hospitals to operate morgues for the care of those who die in their charge until relatives have been notified was recently recommended by the Health Committee of the Council. Bodies must not be removed from hospitals for twenty-four hours after death unless permission is given by the relatives. The removal of bodies in any vehicle which may be afterward used to carry the living is prohibited.

Dr. Dudley threatens Suit to Enjoin a Publication.—An injunction suit to restrain the Globe Educational Society from using his name in connection with *Practical Home Treatment*, a publication of the Society, is to be filed by Dr. E. C. Dudley. Dr. Dudley declares he never saw a copy of the book of which he is advertised as one of thirty-two "eminent specialists," whose medical advice it contains until a prospectus of the work was brought to him recently by a canvasser employed by the concern. The people who got up the book have used his name as that of one of the authors of the book without his knowledge, and they have published also the names of several physicians who are dead, among them Dr. Christian Fenger.

Unions to Fight Tuberculosis.—Tuberculosis farms to be established in different sections of the United States by labor organizations for the treatment of union workers afflicted with consumption were recently advocated by President George W. Perkins, of the Cigarmakers' International Union. The Cigarmakers' Union has had under consideation for a month or more the establishment of such an institution for the benefit of that organization. A new plan, now in preparation, probably will be adopted. The new scheme is broadened to include other international unions. According to the plan, farms will be located in North Carolina, the Adirondack Mountains, in the Middle West, and on the Pacific Coast. On account of the inroads of the disease into the ranks of the cigarmakers that union is interested particularly in the project. Since 1888 the per cent. of mortality among 47,000 members of the organization had been reduced from 51 to 24. Mr. Perkins contended there was room for still greater reduction in deaths. To combat the disease successfully, however, requires special advantages in the way of tuberculosis farms. Mr. Perkins heartily favors the project, and expects within a month or two to see other labor organizations co-operating.

Court Rules Surgeon Must Get Patient's Consent Before Major Operation.—Any surgeon who performs a major surgical operation on a patient, without the consent of the patient, is, under the law, guilty of malice, and is liable to punitive damages. Even the consent of the nearest relative to such operation, provided the patient be of sound mind, does not relieve the surgeon of liability. This principle has just been enunciated by the Appellate Court in a decision affirming Judge Tuley's finding of $3,000 damages against Dr. E. H. Pratt, who, it is said, in 1897 operated on a Mrs. Davis without her consent and against her wishes. As a result of the operation, it is claimed, she became insane, and is now an inmate of the Kankakee Asylum. The Appellate Court's opinion, written by Judge E. O. Brown, holds that the surgeon deliberately deceived the patient regarding his intentions to perform an operation, and declares that the performing of a major operation without consulting and obtaining the consent of the patient, except in a case of emergency, amounts in law to malice and the surgeon is responsible for damages. Dr. Pratt, in his defense, asserted that the husband had given him *carte blanche* at the first interview to perform whatever operation he considered necessary, but admitted that this agreement was not made in the hearing of Mrs. Davis.

Dr. Senn on Brilliance and Genius.—It seems that an American daily recently published a short extract of an address of Sir Frederick Treves, which appeared under the head "Brilliant Surgeons not Wanted." Among other things, Treves is reported to have said: "Genius is some sort of neurosis, an uncalculated nervous disease. The few men of genius I have met were exceedingly impossible persons. They are certainly entirely out of place in the medical profession, where even cleverness is not to be encouraged. Indeed, of all desperately dangerous persons the brilliant surgeon is the most lamentable." The source from which this quotation emanated attracted Dr. Senn's attention. Further, he states that "for many years the medical profession has regarded Sir Frederick as a genius for good and substantial reasons. A genius in the sense in which this term is used in the quotation consists in a distinguished mental superiority; uncommon intellectual power; especially superior power of invention or origination of any kind, or of forming new combinations, or making new applica- Frederick such an enviable distinction in its own ranks? I think not. If it had not been for a liberal amount of inborn genius he never would have attained the worldwide reputation he so well deserves. The man who speaks so disparagingly of the brilliant surgeon and genius as an attribute of medical men is an indefatigable investigator, a skilful anatotions of existing principles or facts. Has the medimist, a prolific author, a pathfinder in the unknown fields of surgical patholoyy and operative technic, and certainly a clever operator.

CANADA.

A Union Banquet in Montreal.—On the evening of February 21 the profession of Montreal, both English and French, sat down to a love feast, and the hatchet was buried forever. The occasion was a joint banquet of the Medico-Chirurgical Society cal profession made a mistake in according Sir

and La Société Médicale, and was significant in that it will tend to draw these two portions of the profession in that city into bonds of closer union.

Analysis of Montreal's Water.—A special commission is conducting day by day an analysis of the water of the city of Montreal. Frequent microscopical examinations have been made, and Dr. George Charlton, now of the Regina bacteriological station, has stated that he has found upward of forty varieties of organisms in Montreal's water. So far the examinations have not revealed the presence of any typhoid bacilli.

Vancouver General Hospital.—The annual meeting of the Trustees of the Vancouver (B. C.) General Hospital was held in that city on February 8. Dr. A. M. Robertson, the medical superintendent, submitted the following report: During 1904 the total number of patients admitted to the wards was 851, and 785 were discharged. The deaths numbered 63, and there were left in the hospital on January 1, 1905, 61 patients. The number of patients' days treatment during the year was 20,206, being an average of 55.2 patients per diem. The average cost per capita was 1.56. There were treated 307 cases of medical disease, 400 surgical cases, 28 eye cases, 40 cases of diseases of women, while 272 operations were performed, 23 being for appendicitis.

Actinomycosis Before the Montreal Medico-Chirurgical Society.—At a recent meeting of the Montreal Medico-Chirurgical Society, the subject of actinomycosis received considerable attention. It was introdued by Dr. James Bell, who reported nine cases, in which the diagnosis had been confirmed in all by bacteriological methods. Professor Adami discussed certain points in connection with he development of our knowledge of this disease and its causation. Dr. W. W. Chapman dealth with the clinical aspect of actinomycosis. From the medical aspect the subject was dealth with by Dr. W. F. Hamilton. Dr. A. G. Nichols had in charge the subject of bacteriology of the disease. All the papers are published in the February issue of the Montreal Medical Journal.

Fighting Tuberculosis in Montreal.—An important report has recently been made to the Hygienic Committee of the City of Montreal. Last June Dr. de Martigny, of Montreal, was apointed a special commissioner by the Montreal Hygienic Committee to proceed to Paris and investigate the Marmorek system of treating consumption. On his return to Montreal a short time ago, after having spent some months in Paris, Dr. de Martigny submitted his report. He is thoroughly convinced from his observations and experiments that Marmorek's serum possesses wonderful efficacy, and feels satisfied that if it were employed in the treatment of all of the tuberculous of Montreal, that tuberculosis would soon, or in ten years at least, be as scarce as smallpox. Dr. de Martigny concludes his report by strongly recommending the employment of Marmorek's serum in the treatment of tuberculosis, stating that the treatment in itself is harmless.

Personals.—Dr. Breffney O'Reilly, only son of Dr. Charles O'Reilly, medical superintendent of the Toronto General Hospital, has gone to Baltimore on special invitation from Dr. Osler to attend the last lectures of that noted clinician before he takes his departure to England. Two graduates of McGill University, Dr. McConnell, son of Dr. J. B. McConnell, of Montreal, and Dr. Wolferstan Thomas, of the same city, have been appointed by the Liverpool School of Tropical Medicine to study tropical diseases, the former to proceed to the west coast of Africa and the latter to South America, on the Amazone.

Dr. Robert Allan Pyne, Toronto, Registrar of the College of Physicians and Surgeons of Ontario, has entered the cabinet of the Hon. Mr. Whitney, having been assigned the portfolio of Minister of Education. Two other doctors are also in the new cabinet, viz., Dr. Reaume, of Windsor, and Dr. Willoughby, of Durham.

Prof. J. George Adami, of McGill University, Montreal, will deliver an address at the annual meeting of the Canadian Association for the Prevention of Tuberculosis, which meets at Ottawa on March 15.

Dr. George A. Charlton, late Governor's Fellow of Pathology at McGill University, and late Fellow of the Rockefeller Institute, has been appointed pathologist and bacteriologist to the Government of the Northwest Territories.

Dr. Oscar Klotz, the Governor's Fellow in pathology at McGill University, which was instituted in 1899, has resigned. This fellowship is open to graduates in medicine, is tenable for two years, and has attached to it a salary of $500 per annum.

Senator Fulford, of Brockville, Ont., has donated the sum of $10,000 toward a nurses' home for the hospital at that place.

Dr. Frank Wesbrook, professor of bacteriology in the State University of Minnesota, and who was recently elected President of the American Public Health Association, has been paying a visit to his old home in Winnipeg.

Dr. James B. Huntington, of Boston, Mass., was in Victoria, B. C., the other day on his way to Japan. Dr. Huntington has been summoned to Japan by the Japanese Government to take charge of the military hospital at Nagasaki.

Dr. Bracken, secretary of the Minnesota State Board of Health, has been in Winnipeg during the past week gathering information regarding the typhoid outbreak there and other health matters in connection with Winnipeg.

GENERAL.

German Congress of Orthopedics.—The Fourth Congress of the German Association for Orthopedic Surgery will open its proceedings April 25, 1905, in Breslau.

No Yellow Fever at Colon.—The Isthmian Canal Commission has received a report from Health Officer Spratling, at Cristobol, Canal Zone, saying positively that it has not been shown that yellow fever does exist or has existed at Colon since he assumed the duties of health officer of Colon, on July 9, 1904. This report is in reply to statements that yellow fever exists at Colon and is concealed or unrecognized.

Compulsory Vaccination Legal.—Justice Harlan, of the Supreme Court of the United States, February 20, delivered the opinion in the case of Jacobson vs. the United States, involving the validity of the Massachusetts State law, giving authority to the health authorities of cities and towns in the State to impose compulsory vaccination regulations. He held the law to be constitutional on the ground that the protection of the health of a community may be exercised by the State as a police regulation.

Boston Medical Library Meetings.—The last meeting was held at the Library February 15. Dr. Geo. Seaes was in the chair. Prof. Gary Calkins, of Columbia University, spoke on the Protozoa in the Etiology of Infectious Diseases. So far, he

said, there was only one disease definitely known to be used by a protozoa. Instead of speaking on this already widely known subject he confined himself to describing, by means of lantern slides, certain morphological changes in the life cycle and reproductive phenomena of various protozoa and their relation to higher organisms and to phenomena seen in disease.

Dr. E. E. Tyzzer, of the Pathological Department of the Harvard Medical School, spoke on some medical studies in the Philippines. Dr. Tyzzer, along with Dr. Brinckerhoff, had been sent by the Pathological Department to continue the study of smallpox in the Philippines, where conditions were more favorable than in this country. In his remarks he did not speak on smallpox, as the material and data collected were not yet entirely worked up, but confined himself to general consideration on the hygienic conditions and the diseases prevalent in those islands. Forty-one per cent. of all deaths were in children under one year, this was largely due to the lack of proper food, there being no fresh milk, all the cattle having been carried off by rinderpest. Amebic dysentery was the one disease of importance to which Americans were subject, and only by careful boiling all water could it be escaped. There were about 6,000 lepers on the islands, with only 500 segregated. Plague appeared in 1899 but has now died out; cholera, in 1902, 157,000 cases and 102,000 deaths! The last case appeared in February, 1904. Dengue fever and beriberi crop up occasionally; typhoid is rare. Rinderpest appeared shortly before the American occupation and killed off 90 to 95 per cent. of all cattle; cattle now are inoculated against the disease, and only 3 per cent. die. He spoke enthusiastically of the excellent laboratory facilities in Manila, and of the good work in all branches of medicine done by the Americans.

American Physiological Society.—The following eminent foreign physiologists have been elected honorary members of the American Physiological Society: Th. W. Engelmann, professor of physiology in the University of Berlin; A. Dastre, professor of physiology at the Sorbonne, Paris; J. N. Langley, professor of physiology, Cambridge University; C. S. Sherrington, professor of physiology, University of Liverpool; Fr. Hofmeister, professor of physiological chemistry at the University of Strasburg; J. P. Pawlow, director of the Physiological Laboratory at the Imperial Institute for Experimental Medicine, St. Petersburg.—(*Science.*)

An Excellent Scheme.—We learn from the *British Medical Journal* that the Danish government has issued a stamp bearing the head of the late Prof. Finsen with the object of placing within reach of the poorer classes a means of subscribing to the national monument by which it is proposed to commemorate the work of the Danish investigator. On the occasion of the Christmas and New Year holidays the Danish Postmaster-General also issued four million illustrated postcards. The profits on the sale of these postcards are to form the basis of a fund for the erection of a sanatorium for indigent consumptives.

An Antiquackery Congress in France.—A congress "for the repression of illegal medical practice," writes the *British Medical Journal*, is to be held in Paris in May next under the presidency of Professor Brouardel. Among the questions to be debated the Organizing Committee has decided that special prominence shall be given to illegal practice by non-medical persons, lay or clerical, with a charitable purpose or under pretext of charity. A report on the subject will be presented by Maitre Bruno-Dubron, Doctor of Law, Advocate of the Court of Paris, and sometime secretary of the Conference of Advocates. He will deal with the illegal practice of medicine by ministers of religion, teachers, benevolent associations, etc. He will consider the measures of repression that can be employed against them, and the measures that can be adopted for the prevention of such abuses, notably the regulation of medical assistance given in educational establishments and in factories, and the legal sanctions to be enforced in case of failure to apply the law. Communications relative to the congress should be addressed to M. le Secrétaire Général du Congrès pour la répression de l'exercice illégal de la Médicine, Hotel des Sociétés Savantes, rue Serpente 28, Paris.

Army Medical Corps Examinations.—Preliminary examinations for appointment of assistant surgeons in the army will be held on May 1 and August 1, 1905, at several points to be hereafter designated. Permission to appear for examination can be obtained upon application to the Surgeon-General U. S. Army, Washington, D. C., and from whom full information concerning the examination can be procured. The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice. The examination will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to the localities from which applications are received, in order to lessen the travelling expenses of applicants as much as possible. In order to perfect all necessary arrangements for the examinations of May 1, applications must be complete and in the possession of the Surgeon-General on or before April 1, and for the examination of August 1, on or before July 1. Early attention is, therefore, enjoined upon all intended applicants. There are at present twenty vacancies in the Medical Corps of the army.

Early Diagnosis of Tuberculosis.—The State Board of Health of Illinois has just issued for distribution to the physicians of the State, a circular on "The Early Diagnosis of Tuberculosis," which will bring to the physician in concise and systematic form, all of the information on the diagnosis of the disease to be obtained from a most exhaustive review of American or foreign medical literature, and which might be an example to other State Health Boards to follow in the fight with tuberculosis. The great interest in consumption, manifested during the past few years, has resulted in extensive scientific investigation, and the importance of early diagnosis both in saving the life of the patient, and protecting those with whom he comes in contact, has directed much of this investigation to the earliest reliable signs of the existence of the disease. Attention of the medical men of the State is directed to the laboratory of the State Board of Health at Springfield, and it is announced that examination of sputum of patients supposed to be tuberculous will be made without cost at any time. The establishment of container stations, for the distribution of

mailing cases for specimens, one in each county of the State, is also announced, and special attention is drawn to the fact that, wherever consumption is found by physicians to exist in unusual numbers, inspectors will be sent to assist in the investigation of the cause, and in taking necessary steps to check its spread.

Manuel Garcia.—The *British Medical Journal* gives further details in regard to the celebration of the hundredth birthday of Señor Manuel Garcia, which occurs on March 17. The anniversary is to be made the occasion of a great demonstration in his honor by laryngologists of every nationality, who will at the same time celebrate the jubilee of their specialty. The program, as far as at present arranged, is as follows: At midday a ceremonial meeting will be held at the rooms of the Royal Medico-Chirurgical Society, Hanover Square. The Spanish ambassador will attend to congratulate the illustrious centenarian in the name of the Government of his native country, and addresses will be presented by the Royal Society, before which Señor Garcia read his paper entitled "Physiological Observations on the Human Voice" just fifty years ago; by delegates of the Berlin, South German, French, Dutch and Belgian Laryngological Societies; by musical societies and by old pupils of the famous maestro. In order not to overtax the strength of Señor Garcia, the addresses will for the most part be only formally presented, and the whole duration of the proceedings will not exceed one hour. The meeting will conclude with the presentation to Señor Garcia of his portrait painted by Mr. John Sargent, R. A., at the request of admirers throughout the world, together with an album containing the names of the subscribers. In the afternoon a scientific meeting will be held in the same place for the purpose of giving foreign specialists an opportunity of seeing the methods of work and results of their British brethren. In the evening there will be a dinner, probably at the Hotel Cecil, at which ladies will be present, and it is expected that Señor Garcia will make a speech. Notwithstanding his great age, he is still fairly vigorous in body, and he was able to attend the annual dinner of the Laryngological Society on January 13. His mental powers are absolutely undimmed by age.

Hall of Fame.—The editor of the *Western Medical Review* desires to nominate five physicians, all of whom well deserve the honor which such an election confers. (1) Benjamin Rush, of whom at the time of his death it was said, "the name of Dr. Rush gave a splendor to the American character and greatly added to its reputation throughout the republic of letters. His works are read coextensively with the language in which they are written. He has been one of the most prominent pillars on which his country's claim to be ranked with the learned nations has pre-eminently rested ever since Dr. Franklin was no more. Few or none of his contemporary fellow laborers can prefer superior or even equal claims as reformers and improvers of the theoy and practice of medicine." As a signer of the Declaration of Independence he gave public mark to his patriotism, shown already in a thousand other ways. (2) David Ramsay, physician, historian, patriot—of him as a graduate from college Dr. Rush said: "He is far superior to any person we ever graduated at our college. His abilities are not only good but great. His talents and knowledge are universal. I never saw so much strength of memory and imagination united to so fine a judgment." His historical writings were as successful as his practice of medicine, which is saying much, and by every effort he contributed to securing the independence of our country. (3) John Collins Warren, First professor of anatomy and surgery in the Harvard Medical School, patron of the first administration of ether for surgical purposes, and founder of the *Boston Medical and Surgical Journal*, one of the first medical publications of the present day. (4) J. Marion Sims, who revolutionized the practice of the surgical treatment of the diseases of women. He enjoyed a greater reputation than any other American surgeon, operating with brilliant success in all the capitals of Europe. He founded in 1855 the great Woman's Hospital in New York City, and the methods which he devised and perfected are among the richest gifts any member of the profession has ever given to humanity. (5) Oliver Wendell Holmes, physician, medical teacher, poet, remembered by thousands not more lovingly for his books than by many others, physicians who by lecture or by printed page have been his pupils. He rendered a great service to the medical profession by first calling attention to the contagiousness of puerperal fever, and his poems and prose writings will be read with delight as long as the language endures.

Dr. Osler on the Race in Canada.—In an address recently delivered to the Canadian Club, Professor Osler spoke of the "incessant dribbling" of their young men into the United States. A million Canadians, he said, were in the States, many in prominent positions in finance and in the professions, particularly medicine and theology. There they have been successful by reason of industry and thoroughness, "the only qualities worth anything in the make-up of a young man." It is not only the young men, however, that are being drained away; what Professor Osler regards as a more serious loss is that of the young women. He had as a patient once a neurasthenic man of thirty or thereabouts whom he asked why he did not get married. "Because," was the reply, "all the girls I wanted have gone to the States." It appears that of 651 women in six of the great eastern hospitals in the States 196, or almost a third, are Canadians. To check this migration of possible mothers, Professor Osler suggested a tax on bachelors over twenty-five or twenty-six, or, as an alternative, an export tax of £20 on every girl leaving Canada. He admitted that she was worth more than that, a statement which was received with approval by his audience, who seemed to agree with him that she was worth £200, and it would pay to give her family that amount to keep her at home. He went on to say that it was sane and reasonable of Canadians to think of themselves as a strong race; they are satisfactorily situated for the development of one strong in body. Rarely has a strong nation appeared elsewhere than in the north. The cold and rigor of winter are much to their advantage, and will produce a stronger type than any other on the continent. Waxing prophetic, Professor Osler foretells that in our generation by far the most virile nation will dwell north of the Great Lakes. The amalgamation and commingling of the heterogenous elements of English, Irish and Scotch is, in his opinion, the best mixture the world had ever seen. If he had his way he would have an act of parliament passed that every fourth Upper Canadian should marry a French-Canadian girl, because in that way the future of the race would be assured. To grow a strong race mentally, elementary education should

be fostered by well equipped schools and teachers. It is not good for boys to be brought up under women; the Canadian people must pay better salaries, and make their teachers feel that they are doing useful and honorable work for their country, with a prospect of provision for age and for their families. Prof. Osler holds that the most important thing is to grow a strong race morally, and that is the hardest of all. He does not think Canada immoral. Homicides are less frequent than in certain other countries, and drunkenness not so prevalent, though some of them with Scotch fathers might have a little tissue thirst. Illegitimacy is rare, and divorce is not common. Morally, the country has made a good start, but there is, he thinks, far too much evil speaking, lying, and slandering in connection with political life. This is entirely superfluous and unnecessary. Young men in this atmosphere of slander and hostility toward opponents suffer great harm. Dr. Osler regards it as an infinitely worse vice than drunkenness. The only way to meet it is to deal with political opponents in an everyday Christian spirit, or, if not in the character of St. Paul's noble Christian, at least in that of Aristotle's true gentleman.—(*British Medical Journal.*)

OBITUARY.

Dr. MORTIMER WRIGHT SHAW, a practising physician, of Cedar Street, New York, died at Middletown, N. Y., on February 22, of pneumonia. He was thirty-seven years old. Dr. Shaw was graduated at the Long Island College Hospital in 1892.

Dr. ELIHU RUSSELL HOUGHTON died last Sunday at his home, No. 167 West Ninety-first Street, New York. He was graduated from Amherst in 1885, and entered Bellevue Medical College. He had served in the United States Navy and in the Immigration and Marine Hospital Service.

Dr. JAMES E. CRISFIELD, of Dansville, N. Y., died February 21, at Jacksonville, Fla. He was the oldest practising physician in Livingston County, N. Y., and prominent in Democratic politics of his section of the State, and for a time served as a member of the New York State Democratic Committee.

Dr. SPENCER VAN DALSEN died at his residence, in Paterson, N. J., on February 17, of bronchial pneumonia. He was born in that city fifty-two years ago. Dr. Van Dalsen was a member of the Passaic County Medical Society, becoming identified with that association in 1876, the same year he was graduated from the College of Physicians and Surgeons in New York.

SOCIETY PROCEEDINGS.

BOSTON MEDICAL LIBRARY MEETINGS IN CONJUNCTION WITH THE SUFFOLK DISTRICT BRANCH OF THE MASSACHUSETTS MEDICAL SOCIETY.

Stated Meeting, held December 21, 1904.

The President, George Sears, M.D., in the Chair.

Nephritis.—The subject of the evening was nephritis. Dr. Franz Pfaff first spoke of the medical treatment. In past years attempts had been made to treat the signs of nephritis, the albuminaria and casts. Drugs such as tannic acid, potassium chlorate were given for this purpose. Sometimes disinfectants as methylene blue were used. At present with regard to inflammatory conditions of the kidneys at least, the object in view is to fulfil the physiological action of the kidneys, whether by the so-called rest treatment, sparing the kidneys and getting other organs and systems to act vicariously for it, as the reins and the intestinal tract, or by stimulating the kidneys directly by means of drugs which affect the renal epithelium, or by stimulating the heart and thereby increasing the flow of blood to the kidneys. Whether to use one method or the other depends on the individual case and its symptoms, the general condition of the patient and the special condition of the heart, kidneys and urine.

In regard to the latter, a single specimen is of no use. Repeated examinations of the mixed twenty-four-hour urine must be made in order to get any accurate results; very often the morning urine will be quite normal, free from casts, albumin, etc., while a specimen of mixed urine may show quite a nephritis.

Rest and Stimulating Methods.—The primary object of both the rest and the stimulating methods of treatment is to get rid of the waste products of the blood. Usually, in all acute inflammatory and acute exacerbations of chronic processes, the kidneys should be spared work. This is done by reducing the ingestion of food, especially the proteids, so as to reduce proteid metabolism. In the course of a year the kidneys excrete seventy to eighty pounds of inorganic salts and about six hundred quarts of urine. This amount of work can, for a short time at least, be very greatly diminished. Next comes the question as to how far we can go in reducing the proteids, and what proteid shall we use. In infants milk works very well, but in adults there is more residue and much less absorption. One hundred grams a day of proteid material is necessary for the healthy person. During a limited period, two, three, or four weeks, this can be reduced 40 to 50 per cent. by increasing the carbohydrates and fats, the loss can be made good and the body equilibrium maintained. Rice is by all means the best carbohydrate to use; macaroni and white bread stand next in order. As regards the ingestion of water, in some cases large amounts are to be taken and in others it is to be reduced. Van Noorden advises, in all cases of nephritis, acute and chronic, to cut down greatly on the amount of water.

Dr. Pfaff considers this view very unsafe, and from experience is sure that in nine out of ten cases treated in this way albumin and the numbers of casts will increase. A normal or slightly increased amount of urine should be passed, and water in amounts sufficient to do this given. If the edema and ascites is present, reduce the water ingestion. Certain patients normally drink too much water, and this should be considered in treatment. The intestine is the chief means of carrying on the vicarious functions of the kidneys; the skin in a lesser degree can be used by hot baths. Salts and vegetable purgatives, such as aloes and gamboge, are the best cathartics to use. If all these means of treatment fail then, and not till then, should the kidney be stimulated. The salts of caffeine and theobromine act directly on the renal epithelium. If by their use the urine shows more albumin and casts they should be discontinued. In chronic kidney disease a milk diet is not practicable for any length of time; meat, red or white, it matters not, must be given in amounts at least 20 per cent. less than normal, and the difference made up by carbohydrates. Animal broths should be avoided as well as alcohol in any form. Under such a diet weight can be gained, but

no attempt should be made to put it on, as it means increased metabolism.

Surgical Treatment of Nephritis.—Dr. Paul Thorndyke spoke on this condition. During the last few years a marked change has come into view as regards nephritis. This was stated by a paper by Reginald Harrison, who in the *London Lancet* of January 4, 1896, spoke of the beneficial effects of operation on certain cases of albuminuria, whereby he was obliged to cut and slash the kidney parenchyma. The operations were not done for the nephritis, but for pain and hematuria. Edebohls, of New York, was the first to operate directly to benefit nephritis itself. The speaker carefully described Dr. Edebohls' technic, and gave statistics showing his results. Seventy-five per cent. of cases of chronic diffuse nephritis dies very soon, showing that this class was particularly unfavorable for operation. By a series of animal experiments, done by L. C. Gifford, of Boston, it was shown that after stripping off the capsule a new one, rather thicker than the first, was formed within thirty days, and that relief could thus be only temporary as far as the capsule itself was concerned. There was a possibility that the blood supply might be increased. On the whole, the speaker considered the question well worthy of further study, and a very valuable field for further investigation.

The Progress of Nephritis from the Standpoint of Insurance.—Dr. Frank Wells dilated on this phase of the disease.—He said that all applicants whose urine showed albumin by either of the ordinary tests were refused, or at least held for further investigation, but that the great expense made it very hard to follow the after life of such refused applicants, and, therefore, statistics on which to base a prognosis were scarce. He went on to speak of the great number of deaths every year from Bright's disease, especially in the large cities, where pressure of living is high, and worry and consequent alcohol consumption is very great.

Uremia and Nephritis Following Scarlet Fever.—Dr. J. W. Elliott mentioned two cases he had operated on for nephritis; one a chronic diffuse case in uremia at the time of the operation, and the other a young adult with a nephritis following scarlet fever. The former case died in three months, and on autopsy an apparently normal capsule was found. The other case is now alive and well. He thinks that the operation has some value, but is not at all sure that the operation as done by Edebohls is to be the one of the future.

Dr. Edward Reynolds considered the operation to be still *sub judice*. He thught that an operation in early cases, without uremia, might be of value; he did not advise decapsulation, but liberal slashing of the kidney substance.

Bilateral Decapsulation.—Dr. J. B. Blake advised strongly, if anything surgical was to be done, the bilateral decapsulation of the two kidneys at once by two surgeons and their assistants. Improvement in the cases at the Boston City Hospital was variable in degree and amount, but that in young people, after medical treatment had failed and they were still getting worse, the operation was advisable and gave the best chance of doing good.

Dr. Henry Jackson, speaking on diet in nephritis, emphasized the fact that each case must be studied and individualized until a suitable diet was found. Animal broths were, in his opinion, very good.

Dr. E. G. Cutler, on the subject of operating, said that if medical means, properly carried out over a long enough time, were of no avail, an operation should be considered.

Treatment of Nephritis in Children.—This was the topic of Dr. John L. Morse, who said that the same lines should be followed as in treating adults. What harms the kidneys is urea, creatinin and phosphoric acid. Too much milk is very apt to be given. For a boy of four years 15 grams of proteids equaling 12 ounces of milk per 24° was enough for a few days. Meat extractives in broths should be avoided because of the large amount of creatinin. Phosphoric acid was contained in the yolks of eggs, and could be neutralized by calcium carbonate and thus given in milk. As regards drugs, no stimulant like digitalis or creatinin should be given in the acute stage. There are three classes of nephritis; one with much edema and uremia and very little urine, to be treated with the lowest possible diet, a little water, cathartics, and hot packs; second, with slight edema, no uremia. These should be given more milk with cream and cereals, and water varied according to the edema. Third, convalescent stage, when starches and fats were added to the milk and all the water wanted was given.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Ninety-ninth Annual Meeting, held at Albany, January 31, February 1 and 2, 1905.

The President, Dr. Hamilton F. Wey, of Elmira, in the Chair.

(Continued from page 330.)

The Public Health Laboratory.—Dr. Herbert D. Pease, of Albany, said that the laboratories that have been established by public funds have more than repaid the public by the discoveries that have been made in them, and by the usefulness which they have developed. At the present time they are doing good work in the recognition of diphtheria by bacteriological diagnosis, by the discovery of the tubercle bacillus, by the Widal test, by the examination of feces, especially for the existence of parasites, by the determination of the potability of water, and by the examination of samples of milk so as to decide whether they are fit for use or not. In very recent years they have become still further useful by the examination for the presence of adulterants in foods by the determination of the power of disinfectants, by acting as a criterion for antitoxin as regards its strength and purity, as also for vaccine material, and finally by the fact that examinations for rabies and material for the treatment of this dread disease are provided.

Unsettled Problems.—Of course, it may well be said that many of the problems of laboratory work are as yet unsettled. The laboratories themselves are, however, doing the most that is possible for the settlement of problems of disease. How much more is now known of the diphtheria bacillus, of its form and various simulants, of its existence in healthy throats, and of its distribution, than before the establishment of laboratories. With regard to the tubercle bacillus, there are not a few problems that laboratory workers have been busily engaged at and new light is being shed on them every day. What is needed in order that laboratory knowledge may become more definite is more laboratory investigation. In order to make our medical progress assured one of the best elements is to further encourage the laboratory workers. The study of virulence, its increase and decrease under varying

circumstances, and the future of disease and of immunity, these are all in the lap of the future laboratory work.

Opening of the Skull.—Dr. Charles H. Frazier, of Philadelphia, said that the failure of many operations for tumors of the brain were due to the fact that the opening made in the skull was too small to discover the lesion. It is impossible, as a rule, to determine the site of the lesion with sufficient exactness to guide the surgeon for a small opening. There is no more risk in the large opening than in the small, and, as a matter of fact, the mistake has been in making the opening too small rather than too large. He exhibited a skull on which osteoplastic flaps had been raised, some of them four inches in length, illustrating the method which he employs for intracranial investigation. The large flap in the prefrontal region is raised whenever there are psychic symptoms; in the posterior parietal region the flap is raised for such symptoms as astereognosis; in the occipital region for hemianopsia and other similar symptoms. The flap over the motor area is so raised that two-thirds of the region uncovered shall be in front of the central fissure rather than exactly over it, as used to be the case. In making the incision into the scalp a larger flap is made than of the bone. After the bone flap is turned upward the edges of the scalp may be tucked in around it, thus keeping up the vitality of the bone and preventing its separation from the pericranium from which it derives its nourishment, and separation might mean necrosis. The portions of the flap are covered with gauze so as to protect them from any possible injury during the course of the operation. A flap corresponding in size to that of the bone is made in the dura mater. The incision to this issue heals very kindly and very thoroughly. At subsequent operations, even a few months after the first operation, no signs of the opening in the dura could be found.

Postoperative Dressings.—The main purpose to be kept in view in putting on the dressings is that adequate drainage shall be supplied. For this purpose the flap incision itself in the scalp is not used, but special incisions are made somewhat beyond these. Rubber tissue is conducted from the bone out through these openings. A certain amount of oozing is sure to occur from the bone and also from the dura, sometimes even for the brain itself. It provision is not made for its conduction outward a clot will form, and this may become organized giving subsequent trouble by pressure upon the brain. The absence of a direct communication between the outer air, because of the indirect path along which the rubber tissue runs, saves the patient many risks of infection.

Making the Bone Flap.—In Dr. Frazier's experience the best instrument for this is Crile's spiral drill. This is run by means of an electric engine. The end of the drill is protected by a flange, which fits beneath the bone and keeps the dura out of the way. When the trephine opening is first made through which the drill is passed a director is used to separate the dura from the skull in case there should be adhesions. By means of this drill it takes but a few minutes, from five to seven, to make a large bony flap. Time is a very precious thing in these operations, and there is no instrument that is as useful as the spiral osteotome.

Other Instruments.—Stelwagon, of Philadelphia, invented an extremely ingenious circular saw which can be used with excellent effect whenever an electric engine is not available. This, however, necessitates the cutting of a semicircular or circular flap of bone, while the spiral osteotome will make any sort of a flap, no matter how irregular its lines. Doyen's circular saw is a useful instrument, but cuts only in straight lines and requires several trephine openings. The ordinary chain saw has the same objection, and besides is rather slow, necessitating operations in two stages, often. With Crile's instrument the operation in two stages is never necessitated.

Blood Pressure.—As to the condition of the patient, Dr. Frazier has found that the most important element indicative of his condition is the blood pressure. This is of itself quite sufficient to enable the surgeon to know the exact state of his patient as regards shock. Its more frequent use would undoubtedly reduce mortality, especially in operations upon the central nervous system. The ordinary blood-pressure apparatus is not difficult of adjustment, and after the operator has become familiar with it it is rather easy to keep in touch with.

Palliative Trephining.—This procedure, which the French sometimes call decompressive trephining, will be found useful in very many cases. In brain tumors that are beyond the reach of surgical intervention, intracranial pressure becomes the most fruitful source of symptoms. Patients suffer from vomiting, from choked disc, from intense headache, for which no relief can be afforded, and finally from blindness. Practically all of these symptoms are relieved at once by the relief of increased intracranial pressure through a trephine opening, and the raising of the bone flap. For this purpose the region of choice is the parietal region. The reasons are obvious. Against the frontal region there are cosmetic objections. In the occipital region hernia of the brain is much more likely to occur. Perhaps the most striking benefit conferred by this palliative operation is the saving of vision. At times, unfortunately, patients have come under Dr. Frazier's care when vision was already too far gone for relief of pressure to be of avail in saving of it. Experience shows, however, how much good is accomplished, and more and more of these operations will be done as time goes on.

Opening the Skull.—Dr. Farquhar Curtis, of New York, said that the instruments and technical methods presented by Dr. Frazier are of service not alone in operations for brain tumor, but for all cases where opening of the skull is necessary. Up to this time he has used the wire saw. There is always some difficulty in fastening this from one trephine opening to the other. Crile's instrument is undoubtedly the best for the purpose. The secret of successful brain surgery is the making of large flaps. There is no more danger in a flap that is four inches across than in one that it two inches. The oblique drainage is an important element in the after-treatment. Dr. Curtis, however, has found rubber cloth better than rubber tissue. Portions of this latter are likely to be left in the wound, because it is rather friable. The development of the technic of operations upon the cranium will undoubtedly lead to the relief of many patients who have hitherto suffered from almost obstinate symptoms from intracranial pressure, and because more tumors will actually be removed and depressed bone raised than has been the case in the past.

Two-Stage Operations.—Dr. Frazier, in closing the discussion, said that his experience with these is very limited. He has found so little shock when the opening into the brain is made rapidly that he

has never had to wait for the recovery of the patient before proceeding to complete the operation. In a number of observations carefully made he has found that the removal of the growth does not add to the gravity of the patient's condition, and so he now always proceeds with the operation. In this matter a revolution has been worked by the newer method. For such men as Von Bergmann the two-stage operation seemed to be absolutely necessary.

Vasomotor Disturbance from Sunlight.—Dr. Samuel B. Ward, of Albany, reported a case in which erythema and urticaria developed whenever the patient was exposed to the sunlight. A number of observations under varying circumstances were made in order to discover just how and why the skin lesions occurred. When the patient was exposed to direct sunlight the temperature of the skin being normal just before the exposure at about 87 degrees and the general temperature being normal, within ten minutes the temperature of the skin was raised nearly ten degrees, though the general temperature remained the same. The arms and shoulders were exposed, and they became of a brilliant scarlet color. Besides this erythema there were white, round wheals of urticaria, which were very itchy and irritable. After a time swelling set in, and this became so marked as not to allow bending at the elbow. The redness went down in fifteen minutes, but the swelling remained for some time. While the erythema was present the sensation was tested. and was found to be normal for heat and the tactile sense.

Experimental Observations.—A portion of the skin surface was exposed to the X-rays for some time, but no untoward effect was found. Ordinary heat rays produced no bad effect, for the patient can sit before the fire without discomfort. Evidently the element that has an injurious action is in the sunlight, for she is unable to go out more than one day of twenty without having these lesions recur. In order to determine what portion of the sunlight produced the effect, portions of the arm were covered with red and yellow glass. Beneath the yellow glass there was some slight change in the skin appearance produced. Beneath the red glass there was no change. though the sunlight produced its usual effect where no glass intervened between it and the skin. It is evident that actinic rays of the sun, those which produce photographic effects, are responsible for the changes noticed.

Sensitiveness to Cold.—A certain number of cases of sensitiveness to cold in various parts of the skin somewhat corresponding to this case have been reported as a consequence of freezing. These cases are interesting by contrast. It seems probable that the vasomotor nerves are so affected by the pathological conditions of freezing that they refuse to act whenever exposed to cold again. Some trouble with the vasomotors seems to be present in Dr. Ward's case. The patient cannot take one-two-hundredth of a grain of nitroglycerin without lying down because of the rush of blood to the head which it occasions.

Similar Case.—Dr. Ruggles, of Buffalo, reported a case in which the patient, a young woman of twenty, suffering somewhat from constipation and menstrual irregularity, had her face frost-bitten, and had since suffered from urticaria whenever exposed to cold. In this case the lesions occur only on the face, never on the hands. They are absolutely symmetrical, though true urticaria is said never to occur symmetrically. The trouble would seem to be in the peripheral nerves, and to be due to a vasomotor neurosis.

Central Neurosis.—Dr. Kinnear said that such cases would seem to be due to a central neurosis, and he believes that the application of cold over the spine will benefit them to a great extent. As the result of the shock or some nervous disturbance the nerve centers assume a tendency to become hyperemic. As a consequence the peripheral vasomotor apparatus is no longer properly under control, and peripheral hyperemia with even the leakage of serum into the skin, which is the basis of urticaria, may occur.

Idiosyncrasies.—Dr. Frederick Curtis, of Albany, said that patients have these curious but inexplicable idiosyncrasies. He has had under observation one who suffered from urticaria whenever clean sheets were placed on the bed. The only thing to do for these patients is to teach them to avoid the cause of their disturbed cutaneous condition.

CHICAGO SURGICAL SOCIETY.

Regular Meeting, held December 5, 1904.

The President, L. L. McArthur, M.D., in the Chair.

Actinomycosis.—Dr. Arthur Dean Bevan, in a paper on this subject, referred, first, to the early history of this disease, saying that von Langenbeck first noticed the sulphur-green-like bodies of actinomycosis as early as 1845; and that Bollinger recognized the ray fungus in lumpy jaw in cattle. Israel, in 1878, recognized the ray fungus as the cause of the disease in man. Belfield first recognized the ray fungus in lumpy jaw in cattle in this city, and Murphy reported the first case of actinomycosis in man in this country in 1883. Clinically, the disease appears in four different forms, with four different groups of infection: (1) The head and neck actinomycosis, with infection from the mouth and pharynx; (2) actinomycosis of the chest through the respiratory tract; (3) abdominal actinomycosis, with infection probably always through the alimentary canal; possibly, however, in rare instances through the female genital organs; (4) actinomycosis of the skin. The lymphatic glands are seldom involved, but he reported one case in his group of cases in which there was invasion of the lymphatics.

Enormous Infiltration.—Dr. John B. Murphy said that an important feature brought out was the demonstration of lymphatic involvement. In none of the cases that came under his observation was it shown that the lymphatic glands became involved, or that the infection was transmitted through the lymphatic chain and arrested in the lymphatic glands. Another point was the enormous infiltration that occurred around a small focus of suppuration. This is one of the first things that attracted Dr. Murphy's attention in the first case of actinomycosis he saw in 1883. This was a typical case of actinomycosis of the jaw, in which the infiltration extended down to and involved the neck to the extent of an inch or more on each side. There was apparently a small fluctuating focus. When the involved area was opened, a number of yellow bodies escaped. These appeared molded. They were not round or oval. The infiltration described by Dr. Bevan in his case of actinomycosis of the pelvis was one of the classical conditions of the disease in the peritoneum. While the disease affects bones, muscles, and destroys the tissues with which it comes in contact, it elects fatty tissue, and passes by preference along the fatty tissue tracts, involving skin, muscle or bone, lifting its periosteum,

attacking the periosteum, or sometimes attacking the fatty tissue close to the periosteum without attacking bone. As to treatment, Dr. Murphy's first, second and third cases recovered, but the forth one terminated fatally, which was one of peritoneal actinomycosis, where the micro-organisms escaped either through the stomach wall or transverse colon. There was no perforation of the stomach wall nor of the large intestine. There was infiltration of the fatty tissue on both sides, the micro-organism having passed up into the diaphragm and beneath the surface of the liver. Relative to actinomycosis of the appendix, he has seen two cases, one of his own and another he saw in consultation with Dr. Lee. In the first the actinomycotic process was confined practically within the appendix. The appendix was extirpated, followed by recovery. The case of Dr. Lee pursued an entirely different course.

Dr. E. Wyllys Andrews said one cannot help noticing the large percentage of recoveries which had been referred to, which was quite contrary to his own experience in the rather limited number or cases he has observed in the last few years. Most of the cases he has seen have either died or, if they were living, there is an increasing actinomycotic mass in other parts of the body. He recalls one man who has a mass in his chest, and who, he thinks, is going to die. These cases ought to be worked up with exceeding care. If one analyzes all the cases of actinomycosis of the alimentary canal, he would scarcely find one involving the stomach, and the probabilities are that the acidity of the stomach prevents the active generation of the germs there. A comparatively small number are found in the upper intestine. In nearly one-half of all cases reported the actynomyces are found in the cecum and in the appendix. He has not seen a case of actinomycosis involving the rectal region.

Hematogenous Infection.—Dr. M. L. Harris has seen during the past year three cases of actynomycosis, which apparently were hematogenous infections. The first case was in a country boy, who was admitted to the hospital with a slowly developing swelling in the prevesical space. It had the characteristic hardness. He opened the mass and obtained a small amount of pus. Inoculations from the pus gave a pure culture of *Staphylococcus pyogenes albus.* In the first pus which was evacuated no granules were recognized, but on the dressings a few days after the characteristic granules were at once recognized, and when submitted to the microscope demonstrated to be actinomycosis. The case progressed, the exudate spread, sinuses and fistulæ were formed about the abdominal wall into the lateral wall of the pelvis. The boy was operated on several times; these tracts thoroughly cleared out, and during the operations the abdominal cavity was opened, because the speaker was suspicious of a primary intestinal origin. The abscess did not originate in the appendix, nor could he find any point of the intestinal tract that was involved, so he was unable to explain how the infection reached the prevesical space, except through the blood. The patient was subjected to all the recognized treatments for actinomycosis. Iodide of potash was given internally, continually and interruptedly. He was given X-ray treatment very thoroughly, but, in spite of all treatment, he progressed from bad to worse, and after a period of several months died. A peculiarity in this case was the very marked reduction of hemoglobin. The red cells were not reduced in number, but the hemoglobin was reduced to a low point before death. Dr. Harris detailed at considerable length the other two cases that have come under his observation, and said, that the three of them seemed to be instances of hematogenous infection, the organisms having been carried in through the blood, as there was no local point of infection, so far as he could determine.

Dr. A. J. Ochsner said there are a great many cases of actinomycosis in Chicago and its vicinity, although most of them had not been accurately diagnosed. He was almost never without a case of actinomycosis. He has one at the present time under treament. He recalls half a dozen cases in which the face and neck were involved, one in which the larynx was affected, in a number the abdomen was involved, in one the eighth rib, and in others the appendix. He has had two or three cases of actinomycosis of the lungs. As to treatment, he believes surgeons should follow the method of veterinary surgeons, if they wish to succeed in treating this disease. In late cases of actinomycosis in cattle the veterinary surgeon has the animal killed. He never tries to cure a late case of this disease in cattle. In the early cases, however, an effort is made to remove the entire mass by thorough curettage, followed by the administration of large quantity of iodide of potash. Veterinary surgeons give a large quantity of iodide of potash for several days in succession and then they interrupt its use, giving the spores time to develop into ray fungi, after which they repeat the dose for a day or two, then withdraw it for a day or two again, repeat it again, and so on, and in cases where the actinomycotic process is localized the cattle recover. Actinomycosis in the human being should be treated on the same principles. About eight or nine years ago the speaker followed the method of giving iodide of potash in increasingly large doses, but in several cases in succession there was apparently no effect upon the disease until he reached the dose of a dram three times a day, and then the progress of the disease became arrested. He remembers the first case in which he was impressed with the importance of large doses of iodide of potash and this was an instance in which he operated a dozen times. It was a case of actinomycosis of the scalp. The disease burrowed and burrowed, and every week or so he found it necessary to scrape the scalp and apply every remedy he could think of, without much improvement. However, when he reached 60 grains of iodide of potash three times a day the disease was arrested. The next case he had acted in a similar manner, and since then he has made it a rule to give 90 grains of iodiode of potash in a half pint of hot milk at two in the morning, two in the afternoon and ten at night, for as many days as the patient can stand it. If the patient can bear it for a week, then it is withdrawn for some days, after which it is repeated for three or four days, withdrawn again, and later repeated once a month. The reason why he repeats odide of potash once a month is this, that in one of his fatal cases he did this for a time, and the patient was apparently well, but two years later the patient had a recurrence and died of the disease. A circumscribed encysted abscess was found at autopsy in the lower end of the right pleura.

Actinomycosis of the Alveolar Process.—Dr. L. L. McArthur reported the case of a young woman,

very fond of golf, who frequently was rebuked by her husband for dragging at hay and chewing it while playing golf. She developed actinomycosis of the alveolar process, which required three or four months' treatment by a dentist before it healed. Nine or ten months later, while playing golf in the South, she began to have pain in the right iliac region, and this pain being of a rather colicky character, on her return home she consulted her family physician, Dr. Carey, who, feeling a mass there, and noticing she had elevation of temperature, sent her to the speaker's service at St. Luke's Hospital, believing it to be a probable appendical abscess. Dr. MacArthur concurred in this diagnosis and advised operative measures. On opening the abdomen, a tumor was found in the ileocecal region, involving the appendix, ileum and cecum, for a distance of four of five inches on the cecum. The tumor in its clinical aspect, although having no miliary bodies in it, seemed to him to be a hypertrophic tuberculosis, and on that basis, with the consent of the family physician, he made a resection of the entire ileocecal region, implanting in the side of the hepatic flexure of the colon the resected ileum. On lifting up from the iliac fossa this mass, a few drops of pus were seen on the fascia covering the iliac muscles. This was mopped up, drainage provided for, and the wound closed. The wound healed after a few weeks, the patient left the hospital, and for three months was quite well, when she began to have a cough and high temperature, with chills and night sweats, and during his absence from the city she was seen by his assistant, Dr. Hollister, who considered the case—although he was unable to demonstrate tubercle bacilli in the sputum—one of acute tuberculous trouble, the patient having lived in the house of a patient who had died a few months before of tuberculosis, and many of her living things still being in the house, such as bedding, clothing, etc. On Dr. McArthur's return, the patient being extremely ill, he saw her and found a tender area, with an enlargement in the neighborhood of Reidel's lobe of the liver, and considered the condition one of hepatic abscess with burrowing through the diaphragm. He urged operative interference. The husband refused to have any operation performed until she had become extremely run down and had a temperature varying from 103° to 106° F. for three or four weeks. Then, at his urgent solicitation, the patient was brought to the hospital, he made an incision over this area, and found an abscess which had perforated the posterior sheath of the rectus muscle, and in which were then to be seen for the first time the typical granules, and the nature of the case became clear. The patient lingered along for about two weeks, and finally died. A careful post-mortem examination was made by Dr. Hektoen, and a very thorough report of the case was made. In the sputum there were found the typical leptothrix-like threads, but never any suspicion was had of granules. In the stomach abscess opened there were typical granules to be found, and from them cultures were made which proved typically characteristic, so that here was a person in the habit of chewing grain and hay, who had disease of the jaw, who had a hypertrophic actinomycotic infection, which often is indistinguishable from tuberculosis, who recovered from that and later developed hepatic abscesses, with perforation of the diaphragm. Post-mortem examination showed multiple stomach abscesses burrowing into the diaphragm.

NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, held November 16, 1904.

The President, J. Riddle Goffe, M.D., in the Chair.

Tubo-Abdominal Gestation.—Dr. E. B. Cragin presented a photograph and the specimen of this condition occurring in a primipara thirty-four years of age, who had been dilated and curetted for sterility seven years previously. Vomiting and pain had been present at intervals throughout the pregnancy. A diagnosis of full term ectopic pregnancy with dead fetus was confirmed by the operation. The sac was found adherent to the abdominal wall and floor of the pelvis, and roofed over by coils of adherent intestine. The entire sac containing the placenta was enucleated from the adherent surroundings until it was only attached by the upper portion of the broad ligament, which, forming a pedicle like an ovarian cyst, was ligated and the entire sac removed. No denudation of the peritoneum had occurred so that the abdominal wound was entirely closed and the patient made an uneventful recovery. Further examination of the sac showed the amnion and chorion to be covered by the expanded tube on the proximal side, while the distal portion had been reinforced by the adherent coils of intestine and panital peritoneum. He therefore considers this case to be one of tubo-abdominal gestation, in contrast to the three cases reported by him in 1900 to the American Gynecological Society, and to the one subsequently reported in the same year to the New York Obstetrical Society, all of which were of the intraligamentous variety.

Retrorectal Dermoid of the Pelvic Connective Tissue.—Dr. Hiram N. Vineberg presented a dermoid cyst that he had removed from a patient, thirty-five years of age, who presented herself with a complete prolapse, rectocele and cystocele one year subsequent to an instrumental delivery. There was also to be felt behind the rectocele an elastic tumor extending to the left and behind the rectal wall. A probable diagnosis of a dermoid of the subperitoneal connective tissue was made, but an operation for the uterine prolapse was only done at this time, leaving the rectocele and tumor. One year later the patient returned with rectocele larger and the tumor of double its previous size. After failing to remove the tumor through the vaginal wall, it was enucleated through an incision extending from the coccyx to the anal margin. The rectocele was then repaired.

Full-term Extra-Uterine Pregnancy.—Dr. Hiram N. Vineberg presented such a specimen that he had removed from a patient twenty-eight years of age, who had suffered from abdominal pains at irregular intervals throughout the pregnancy. The loss of flesh had been so marked that a diagnosis of a malignant growth was possible. Although there was considerable hemorrhage and difficulty in removing the sac, it was all enucleated except a small piece which was sewed into the abdominal wound. Recovery and closure of the fistula in five weeks.

Simultaneous Extra- and Intra-Uterine Pregnancy.—Dr. Hiram N. Vineberg related the history of a patient to whom he was called on account of an attack of pain in the right side of the abdomen, which resembled both appendicitis and gall-stone colic. From the history and examination, however, he suspected an ectopic pregnancy. A distinct tumor behind the uterus disappeared during an examination under anasthesia, and while performing a curettage by which the material of a four to five weeks' preg-

nancy was removed, the patient collapsed. An incision in the posterior fornix revealed free blood, and an immediate laparotomy without the ordinary preparations or instruments revealed a ruptured tubal pregnancy. Microscopical examination showed chorionic villi in the tube and in the material removed from the uterus.

Dr. E. B. Cragin, in the discussion, referred to a case depicted in the American Text-book of Gynecology, upon which he operated one night for ectopic pregnancy, and the next day a fetus with its membranes was passed from the uterus.

Dr. H. N. Vineberg recalled two cases of intra- and extra-uterine pregnancy. In one the diagnosis was not made until labor began, when the tubal rupture occurred.

Toxemia of Pregnancy.—Dr. James Ewing (guest) gave a lantern demonstration and read a paper, entitled, "The Pathological Anatomy and Pathogenesis of the Toxemia of Pregnancy." He first demonstrated and described the different pathological varieties as they occurred under the two clinical forms, eclampsia and hyperemesis. Under the cases of eclampsia, so-called clinically, because of the presence at some time in the course of the disease of convulsions, were included the following pathological varieties: (1) Hemorrhagic hepatitis; constituting the lesion of 95 per cent. of all such cases, in which the liver was of normal size, but of reduced consistence. Hemorrhagic foci were seen on both the surface and sections. Microscopically, there was a uniform and intense degeneration of the liver cells, showing a disintegration of protoplasm and abolition of liver function. There were also minute hemorrhages, usually in relation to focal necrosis. (2) Acute yellow atrophy; clinically, intermediate between eclampsia and acute yellow atrophy, in which the convulsions are less prominent, but toxic symptoms are more marked and not limited to the last month of pregnancy. The liver is slightly reduced in size and reduced in consistence. It is mottled red and yellow. There is hydropic and fatty degeneration of the inner two-thirds of the lobules; an intermediate zone of necrosis and a peripheral zone of slight granular and fatty degener_tion. (3) Minimal hepatic lesions: The liver may appear normal, showing only a reduced consistence, and indications of slight congestion and cloudy swelling. Microscopically, there is a moderate diffuse granular and fatty degeneration with foci of partial necrosis, showing autolysis of liver cells, and alteration of function.

Hyperemesis.—The lesions were given of three fatal cases, in which no convulsions occurred, but which were clinically diagnosed as pernicious vomiting of pregnancy. In two of these, the liver presented the same lesions as appear in eclampsia, in one the liver was distinctly atrophic. There may be the same necrotic process, but it may not be reduced in size, and may have less marked degeneration, and changes which might be overlooked, but which indicate extensive autolysis and profound disturbance of function.

Dr. Ewing also demonstrated acute degeneration in the liver of a rabbit dying immediately after giving birth to young. He also mentions a similar lesion occurring in a rabbit after injection into it of the blood of one of his fatal cases of toxemia. After referring to the relation of toxemia to postgestational acute yellow atrophy, he spoke of the frequent occurrence of leucemia shortly after pregnancy, and the presence of leucin and tyrosin in the urine of both leucemia and toxemia, and the similarity of the hepatic lesions in both diseases. Brief reference was also made to the possible relation of toxemia to postpartum anemia and sepsis.

Pathogenesis.—The disturbance of nitrogenous metabolism, which is responsible for the clinical manifestations of the toxemia of pregnancy, is due to a failure of oxidizing capacity on the part of the liver. The proteid derivatives, chiefly amido-acids and ammonia, also those containing sulphur, are not combined into urea, but circulate in the blood in poisonous forms, and are excreted to some extent by the kidneys. The complex nature of the sources of these poisons renders less obscure the fact that the clinical manifestations may vary from mild vomiting to acute yellow atrophy. Although the mild and fatal cases of eclampsia are admitted to be identical in nature, a mild form of acute atrophy is not generally recognized. Mild vomiting is considered physiological and severe vomiting is thought to be an exaggerated form of the other without a definite pathological basis. Ewing, however, believes that acute atrophy is frequently followed by recovery. He thinks, too, there is no reason for separating either clinically or pathologically the mild and severe forms of vomiting, which seldom is the only symptom of the disease. Disturbance of nitrogenous metabolism is present in cases of non-fatal vomiting, and unoxidized proteid derivatives as leucin appears in the urine. The hypobromite test he considers unreliable, as leucin, tyrosin and ammonia are all estimated with the urea. The absence of jaundice in fatal cases of vomiting means that the bile-producing function of the liver is inhibited. The present view of the nature of the toxemia classes it as a functional disturbance of the liver, usually attended by severe anatomical lesions, and secondarily with a functional disturbance and anatomical lesions of the kidneys and other organs. It is primary in the liver, as the synthesis of urea is exclusively a function of the liver. Disturbances of the kidneys doubtless exist from the first, but only become pronounced when the poisons resulting from the failure of liver oxidation cause degeneration and exudative inflammation of these organs. As the morbid process is originally a functional disturbance of the liver, its intensity is not entirely dependent upon any anatomical changes, so that fatal cases occur with minimal lesions. Various factors are present in this disturbance of nitrogenous metabolism—the retention of principles ordinarily thrown off at menstruation, increased metabolism from the growth of the fetus, the thyroid gland. The presence of a large amount of unabsorbed saline solution in the intestinal tract in severe cases, and the marked concentration of the blood, leads Ewing to suggest the more frequent and early intravenous infusion of some saline solution like Ringer's.

Some Causes for Puerperal Morbidity Antedating Delivery.—This was the title of the paper read by Dr. J. Clinton Edgar.

The Fetal Manifestations in the Toxemia of Pregnancy.—Dr. W. S. Stone read this paper.

Dr. E. B. Cragin, in the discussion, stated he was more impressed with the fact that the three complications of pregnancy—pernicious vomiting, acute yellow atrophy and eclampsia, all belong to the same group and are due to toxemia. He recalled several cases diagnosed as eclampsia, which the pathologist reported as having the lesion of acute yellow atrophy.

Dr. G. L. Brodhead thought that cases of preg-

nancy could not be observed too closely from the time of the first skipping of the menstruation until full term is reached.

Dr. H. N. Vineberg thought that to say, as Dr. Edgar did, that patients who had had a severe toxemia should not be allowed to conceive was too strong a statement, as in his own experience he had seen several cases go through subsequent pregnancies without any toxemic symptoms.

Dr. J. Milton Mabbott asked if the closure of the os by the mucous plug could be responsible for the toxemia, as thus the relief of some of these cases after dilatation could be explained. He regarded post-partum acute yellow atrophy a virulent variety of sepsis.

BOOK REVIEWS.

THE PHYSIOLOGICAL FEEDING OF INFANTS. By ERIC PRITCHARD, M.A., M.D.(Oxon.), M.R.C.P.(Lond.). Second edition, greatly enlarged and entirely rewritten. Chicago, W. T. Keener & Co.

THE term "physiological" as used in this title would seem to include conditions of both health and disease, and does not fully indicate the scope of the work. A glance at the chapter-headings will show that it is more comprehensive than one might suppose. In Part I they are: Breast Feeding, Method of Percentage Feeding, Milk Modification, in accordance with the physiological requirements and with the infant's symptoms (such as vomiting, colic, diarrhea, constipation), modification of food in difficult cases and in special conditions. Part II is devoted to the Development and Physiology of Infancy, and here the author discourses upon the skeleton, the muscular system, the digestive system, etc.

Among other things he says: "The normal stimulus to the secretion of pepsin is necessary for the proper development of the stomach, therefore it is far more satisfactory at the commencement of life to feed an infant on milk which contains a low proteid percentage, than to supply him with a large percentage of proteids which have been previously digested."

An appendix includes recipes for various liquid foods, percentage tables of the composition of various kinds of milk, cream, condensed milk and patent foods, and methods for subsidiary feeding including the feeding of premature infants. It is a concise and instructive treatise.

EXAMINATION OF THE URINE. By G. A. DE SANTOS SAXE, M.D., Pathologist to the Columbus Hospital, New York City. 12mo volume of 391 pages, fully illustrated, including 8 colored plates. W. B. Saunders & Company, Philadelphia, New York, London.

Dr. SAXE, already known to the medical profession as the inventor of an excellent little instrument for determining the specific gravity of small quantities of urine, has made a very successful attempt in presenting the subject of Urinology in a concise and practical way. The physiology of the kidneys serves as introduction, after which the physical and chemical tests are fully discussed. Some of the obsolete and also some of the more recent tests for albumin and sugar could have been omitted without affecting the value of the book, while a few more reliable methods of estimating uric acid would have been in place, for the uricometer, like the purinometer, is hardly to be relied upon for any degree of accuracy. We also miss tests for pentose and alkapton, which certainly are of more importance at present than the determination of electrical conductivity, to which two full pages are devoted. In the part on bacteriology, no mention is made of the importance of looking for the typhoid bacillus in doubtful cases, and of its methods of identification. All in all, the book will form a valuable guide to the uranologist, and a number of questions appended to each chapter, will greatly facilitate the task of students.

MEDICAL LABORATORY METHODS AND TESTS. By HERBERT FRENCH, M.A., M.R.C.P. (Lond.), Medical Registar, Guy's Hospital, Gillson Scholar, Society of Apothecaries of London; Radcliffe Traveling Fellow, Oxfor University. W. T. Keener & Co., Chicago.

THIS volume is intended as a small handbook for the medical laboratory and has b en written in response to repeated complaints that there is no really small book dealing with the chemical and microscopical tests most useful to medical men. The text is divided into nine chapters, dealing with examination of the urine, blood, sputum, pus, gastric contents, feces, skin and exudates and the tests for common poisons. The descriptions are necessarily concise and to the point, but the illustrations are frequently too crude for a clear interpretation. As a handy reference book to be used in the laboratory, the volume will undoubtedly serve its purpose.

CLINICAL URINOLOGY. By ALFRED C. CROFTON, Professor of Medicine, Chicago Post-Graduate Medical College and Hospital, Physician-in-Chief to St Mary's Hospital, Pathologist to St. Luke's Hospital. Illustrated. William Wood & Company, New York.

THIS book is a novel departure from the usual treatise, since it is not merely a laboratory guide to the analysis of urine, for a purely clinical disquisition on the disorders that produce urinary abnormalities, but is intended as a description of the borderland which lies between the laboratory and the clinic. Many subjects are presented from an entirely new point of view and many tests are cited which are not usually found in treatises of this kind. The text is exceptionally readable, but the illustrations somewhat scant. Everything of practical value is included, but certain subjects which have not so far vindicated their claim to recognition as valuable adjuncts to urinary diagnosis, have been omitted. Why the Ehrlich diazo-reaction has been included among the latter is not quite evident, for the test is certainly of the greatest value in the diagnosis of typhoid and miliary tuberculosis.

BOOKS RECEIVED.

POVERTY. By Mr. Robert Hunter. 8vo, 382 pages. The Macmillan Co., New York.

REPORT OF THE SURGEON-GENERAL OF THE UNITED STATES NAVY. 8vo, 299 pages. Illustrated. Government Printing Office.

LECTURES ON DISEASES OF CHILDREN. By Dr. Robert Hutchinson. 12mo, 338 pages. Illustrated. Longmans, Green & Co., New York.

PHYSIOLOGICAL ECONOMY IN NUTRITION. By Dr. R. H. Chittenden. 8vo, 478 pages. Illustrated. F. A. Stokes & Co., New York.

LABORATORY MANUAL OF HUMAN ANATOMY. By Dr. L. F. Barker. 8vo, 583 pages. Illustrated. J. B. Lippincott & Co., Philadelphia.

TRAVAUX DE CHIRURGIE. By Dr. H. Hartmann. Second Series. Urinary Passages. 8vo, 340 pages. Illustrated. Geo. Steinheil, Paris.

TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS. Volume XIX, 1904. 8vo, 560 pages. Illustrated. W. J. Dornan, Philadelphia.